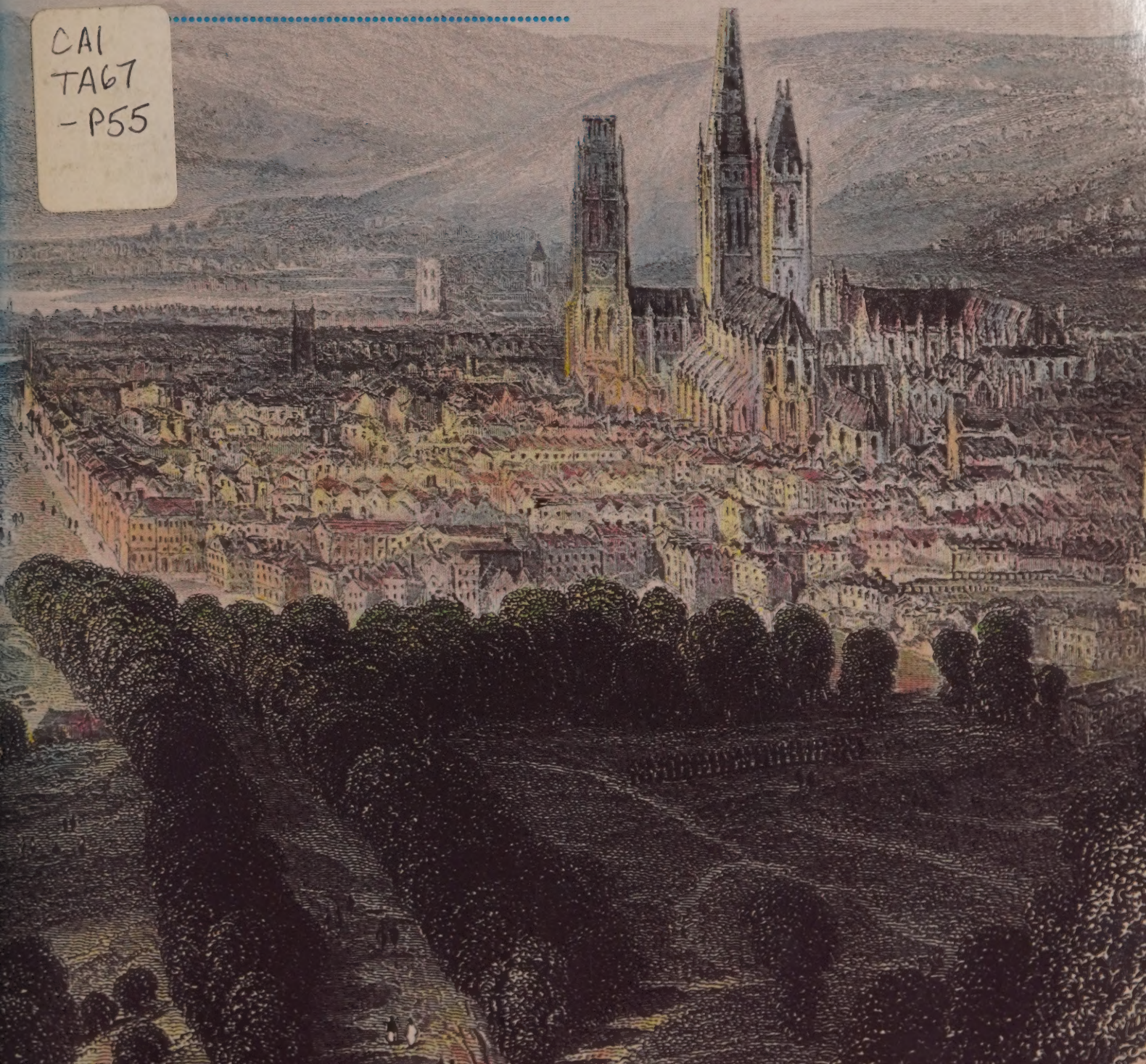
P·O·R·T·U·S

SUMMER • 1989 • ÉTÉ

Spotlight on Rouen
Pleins feux sur Rouen

A closer look at the elements
Notre planête et ses voies de transport



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Ports Canada

P · O · R · T · U · S

Vol. 4 SUMMER • 1989 • ÉTÉ No. 3

Ports Canada Quarterly *Revue trimestrielle de Ports Canada*

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Tracing its history to ancient times, the Port of Rouen prepares to enhance its competitive positioning in the Europe of 1992 — and beyond.

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Going from over-abundance to shortages caused by the North American drought, the grain market has all analysts perplexed.

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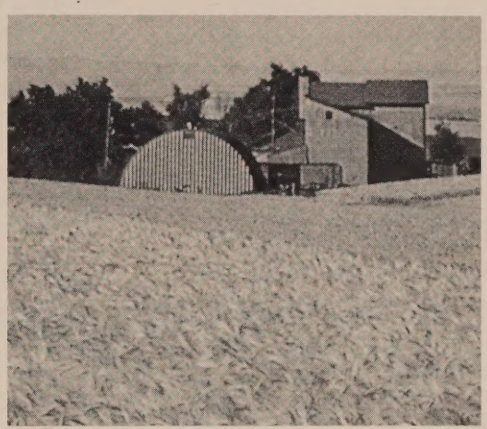

PORTUS (Latin for "port") is published quarterly by Ports Canada, 99 Metcalfe St., Ottawa, Ontario, K1A 0N6. ***PORTUS*** welcomes articles on national or international trade and transportation issues. Manuscripts and correspondence on editorial matters should be addressed to The Editor. Requests for republication or reproduction of articles from ***PORTUS*** should also be directed to The Editor.

Le magazine **PORTUS** *(« port » en latin) paraît quatre fois l'an et est publié par Ports Canada, 99, rue Metcalfe, Ottawa, Ontario K1A 0N6. La rédaction accueille favorablement les articles traitant de commence et de transport, tant sur le plan national qu'international. Prière d'adresser au rédacteur en chef les manuscrits et lettres, ainsi que les demandes de réédition ou de reproduction d'articles parus dans* **PORTUS**.

HALIFAX

A $2.5 million contract has been awarded to Seaport Contractors Ltd. for grading, paving, installation of crane rails and flood lights as part of the port's $4.7 million redevelopment project for its Pier B Terminal. With the completion of this project in late 1989, the 12-acre Pier B terminal will provide Halifax with the facilities needed to serve its growing container trade.

Results for the first quarter of 1989 showed container traffic through the Port of Halifax to be up by 14 percent over the same period in 1988. As well, container volumes for 1988 were 26.7 percent higher in 1988 than in 1987. The arrival of Evergreen Line and Maersk Line at the port in the spring of 1988 contributed to this high rate of growth.

SAINT JOHN

Hoegh Lines has announced its decision to change its Canadian port-of-call from Halifax to Saint John. Hoegh Lines provides service to South East Asia, Sri Lanka and India.

The Saint John Port Corporation has announced the retirement of Garnet Phinney, Director of Engineering and Maintenance, after 30 years of service with the port. Mr. Phinney's duties will be taken over by Captain Cyril Pringle, who has been appointed Director of Engineering and Operations.

MONTRÉAL

Dominic Taddeo, General Manager and Chief Executive Officer of the Montréal Port Corporation, was elected Chairman of the American Association of Port Authorities (AAPA) for a one-year term beginning November 1, 1989.

The AAPA is an organization of port authorities and service organizations related to the shipping sector in North, Central and South America.

The Montréal Port Corporation has announced the appointment of Mr. Frank Martini as Director of Marketing and Mr. Michel Lesage as Director of Operations.

OTTAWA

The Federal Government, as part of its April 1989 Budget, has announced that the At-And-East Grain and Flour Subsidy Program will be eliminated effective July 15, 1989. This subsidy has been a key element in the export of grain and flour through Eastern Canadian ports; primarily Halifax and Saint John.

VANCOUVER

The arrival of the 800-passenger vessel Regent Sun on May 14 officially opened the Port of Vancouver's 1989 Alaska cruise season. The Regent Sun is one of 16 passenger ships based in Vancouver and serving the Alaska cruise business. During the five-month 1989 season, the Port of Vancouver expects to handle 325,000 passengers on 209 scheduled sailings.

The United Grain Growers elevator at the Port of Vancouver was closed for six months on April 1 to undergo a $17 million modernization. At the same time, the Vancouver Port Corporation will undertake a $7 million program to upgrade the jetty at the elevator. The elevator modernization will allow higher grain throughput, while the wharf upgrading will allow larger ships to be handled through an improved fendering system.

• ***Brian Acheson***

HALIFAX

Un marché de 2,5 millions de dollars a été adjugé à la firme Seaport Contractors Ltd. pour le terrassement, le pavage, l'installation de rails pour grue et de projecteurs, dans le cadre du projet de réaménagement du terminal du quai B, au coût de 4,7 millions de dollars. Une fois le projet terminé, soit vers la fin de 1989, ce terminal qui s'étend sur 12 acres permettra à Halifax de satisfaire aux besoins croissants du commerce des conteneurs grâce à ses nouvelles installations.

Les résultats du premier trimestre de 1989 au port d'Halifax démontrent une hausse de 14 % du trafic conteneurisé par rapport à la période correspondante de 1988. Les volumes de marchandises conteneurisées enregistrés en 1988 étaient en outre de 26,7 % supérieurs à ceux de 1987. L'arrivée au port, au printemps 1988, des compagnies Evergreen Line et Maersk Line a contribué à l'intensité de cette hausse.

SAINT JOHN

La société Hoegh Lines a annoncé que son port d'escale canadien serait dorénavant Saint John plutôt qu'Halifax. La compagnie dessert en outre l'Asie du Sud-Est, Sri Lanka et l'Inde.

La Société du port de Saint John a annoncé la retraite de M. Garnet Phinney, directeur de l'Ingénierie et de la Maintenance, qui quitte le port après 30 ans de service. Le capitaine Cyril Pringle prendra la relève avec le nouveau titre de directeur, Ingénierie et Opérations.

MONTRÉAL

M. Dominic Taddeo, directeur général et dirigeant principal de la Société du port de Montréal, a été élu président du conseil de l'*American Association of Port Authorities* (AAPA), et ce pour un mandat d'un an à compter du 1er novembre 1989. L'AAPA est une association qui regroupe les administrations portuaires et organismes de services reliés au domaine de la marine marchande en Amérique du Nord, en Amérique centrale ainsi qu'en Amérique du Sud.

La Société du port de Montréal a annoncé la nomination de M. Frank Martini au poste de directeur, Marketing et de M. Michel Lesage à celui de directeur, Opérations.

OTTAWA

Dans le cadre de son budget présenté en avril 1989, le gouvernement fédéral a annoncé que le *Programme de subvention au transport du grain et de la farine de l'Est* prendrait fin le 15 juillet 1989. Ce programme a joué un rôle clé en matière d'exportation de céréales et de farine depuis les ports de l'Est canadien, surtout ceux d'Halifax et de Saint John.

VANCOUVER

L'arrivée au port de Vancouver, le 14 mai, du *Regent Sun*, navire transportant 800 passagers, a marqué le début officiel de la saison de navigation de croisière 1989 vers l'Alaska. Le *Regent Sun* est l'un des 16 paquebots qui feront la navette entre l'Alaska et Vancouver, leur port d'attache. Le port prévoit accueillir 325 000 passagers, en 209 traversées, au cours de la saison de navigation de croisière de 1989, qui s'échelonnera sur cinq mois.

L'élévateur exploité par la *United Grain Growers*, au port de Vancouver, a été fermé le 1er avril 1989 pour une période de six mois, afin qu'y soient effectués des travaux de modernisation, au coût de 17 millions de dollars. La Société du port de Vancouver entreprendra simultanément un programme de réfection de la jetée de l'élévateur, qui totalisera 7 millions de dollars. La modernisation de l'installation permettra d'y traiter un plus grand volume de céréales et la réfection du quai, dont le système de défense sera renforcé, permettra d'accueillir de plus gros navires.

• ***Brian Acheson***

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Canadian Parliamentary Scene

Canadian Wheat Board Act

An Act to amend the *Canadian Wheat Board Act* (Bill C-92) received Royal Assent on August 18, 1988. The amendments pertain to matters of financing, government guarantees, conditions for delivery of grain to railway cars and payments to producers.

Environmental Protection

On June 30, 1988, the *Canadian Environmental Protection Act* came into force, giving the Canadian government the legislative power to protect human health and the environment from the risks associated with the use of toxic substances. The Act empowers the government to take action against polluters and polluting activities. Some sections of the Act focus specifically on federal government departments, agencies, Crown (state-owned) corporations, and their works, undertakings and lands.

Lobbyists Registration Act

Yet to come into force at the time of writing, the *Lobbyists Registration Act* received Royal Assent on September 13, 1988. The purpose of the Act is to let public office holders and the general public know who is trying to influence the federal government. This will be accomplished through the setting up of a Registry of Lobbyists, which will not impede free and open access to government.

Accident Investigation Board

Bill C-2 is the proposed legislation to establish the Transportation Accident Investigation Board. The Bill was given Second Reading on April 17-18, 1989 and referred to the House of Commons Standing Committee on Transport for its consideration. The object of the Board will be to advance transportation safety by:

- conducting independent investigations and, if necessary, public inquiries into transportation occurrences in order to make findings as to their contributing factors and causes;
- reporting publicly on its investigations and public inquiries and on the findings in relation thereto;
- identifying safety deficiencies as evidenced by transportation occurrences; and
- making recommendations designed to eliminate or reduce any such safety deficiencies.

The Board will be empowered to investigate aviation and railway occurrences, commodity pipeline and marine occurrences, including marine occurrences related to the exploration or exploitation of the continental shelf.

Standing Committee

The House of Commons Standing Committee on Transport was formed in April, 1989, to examine and inquire into all such transportation and related matters as may be referred to it by the House of Commons. These could include, for example, subjects pertaining to the mandate and operations of the Department of Transport and a number of Crown (state-owned) corporations and agencies. In May 1989, the Committee began holding hearings on Bill C-2, which deals with the establishment of the Canadian Transportation Investigation Board. Pat Nowlan, MP (P.C., Annapolis Valley-Hants) and Denis Pronovost, MP (P.C., Saint-Maurice) are, respectively, Chairman and Co-Chairman.

1989 Federal Budget

The 1989 federal budget, which was introduced in April, is probably one of the most significant budgets in terms of its objectives in the last ten years. The two major points of the government's fiscal plan are:

- the reduction of the deficit from the current fiscal year's $30.5 billion to $15 billion in the 1993-94 fiscal year; and
- the reduction of the government's financial requirement (excluding foreign exchange transactions) from $20.5 billion during the present fiscal year to $3 billion for the 1993-94 fiscal year.

In order to bring down the level of the deficit, the government has introduced a series of measures to increase revenue and cut expenditures. On the revenue side, the measures announced in the budget will increase government revenue by $3.7 billion in 1989-90 and nearly $7 billion in 1990-91.

Major expenditure restraint measures for the 1990-91 fiscal year total $2.1 billion. Areas which will be greatly affected by the cutbacks are defence ($611 million), transfers to other levels of government ($505 million), official development assistance ($360 million), Crown corporations ($223 million), and major subsidies and transfers ($92 million). The only area where these reductions in expenditures will have an immediate impact on port traffic is the elimination of the At and East subsidy program. The At and East subsidy has existed since the mid-sixties and provided rail subsidies for the movement of grain and flour exports via east coast ports.

Also of significance for ports is that the government announced in the budget that by the end of Summer, 1989, Transport Canada is planning to publish a discussion paper on a cost recovery proposal for its air and marine facilities and services. The federal budget also provided additional information concerning the government's intentions with respect to implementing the new value-added tax system, now referred to as the Goods and Services Tax (GST).

• *Ginette Morin*

Sur la Colline

Commission canadienne du blé

La *Loi modifiant la « Loi sur la Commission canadienne du blé »* a reçu la sanction royale le 18 août 1988. Les modifications portent sur le financement, les garanties du gouvernement, les conditions de livraison des céréales aux wagons de chemin de fer et les paiements aux producteurs.

Protection de l'environnement

La *Loi canadienne sur la protection de l'environnement,* entrée en vigueur le 30 juin 1988, donne au gouvernement le pouvoir de prendre des mesures pour protéger l'environnement et la santé des citoyens contre les dangers découlant de l'utilisation de substances toxiques. Elle habilite le gouvernement à sévir contre les pollueurs et les activités polluantes. Certains articles concernent spécifiquement les ministères et organismes fédéraux, les sociétés de la Couronne ainsi que leurs entreprises et territoires.

Enregistrement des lobbyistes

La *Loi concernant l'enregistrement des lobbyistes,* qui sera mise en vigueur à une date ultérieure, a reçu la sanction royale le 13 septembre 1988. Cette loi vise à faire connaître aux titulaires d'une charge publique et à la population en général, les personnes qui cherchent à influencer le gouvernement fédéral. La création d'un Registre des lobbyistes n'empêchera toutefois pas l'accès aux différentes administrations gouvernementales.

Accidents de transport

Le projet de loi C-2 vise l'établissement du Bureau d'enquête sur les accidents de transport. Le projet a reçu la deuxième lecture les 17 et 18 avril 1989 et a été renvoyé au Comité parlementaire permanent sur les transports à fin d'étude. Le Bureau a pour mission de promouvoir la sécurité des transports :

- en procédant à des enquêtes indépendantes et au besoin, à des enquêtes publiques sur les accidents de transport, pour en dégager les causes et les facteurs;
- en publiant des rapports rendant compte de ses enquêtes, publiques ou non, et présentant les conclusions qu'il en tire;
- en constatant les manquements à la sécurité mis en évidence par de tels accidents; et
- en faisant des recommandations sur les moyens d'éliminer ou de réduire ces manquements.

Le Bureau pourra procéder à des enquêtes sur les accidents aéronautiques, ferroviaires, maritimes et de productoducs, y compris les accidents maritimes liés à l'exploration ou à l'exploitation du plateau continental.

Comité sur les transports

Le Parlement a établi, en avril 1989, son Comité permanent sur les transports, chargé de faire enquête sur toute question relative aux transports que la Chambre des communes peut lui confier, notamment ce qui touche le mandat et le fonctionnement du ministère des Transports et d'un certain nombre de sociétés et organismes de la Couronne. Le Comité a commencé à tenir des audiences en mai 1989 sur le projet de loi C-2, qui prévoit la création du Bureau d'enquête sur les accidents de transport. On s'attend à ce que le Comité s'intéresse à l'état actuel du réseau des Grands Lacs/Voie maritime du Saint-Laurent. Le comité se compose notamment de Pat Nowlan (C.P., Vallée de l'Annapolis-Hants) et de Denis Pronovost (C.P., Saint-Maurice), qui en sont respectivement président et vice-président.

Le budget fédéral de 1989

Par ses objectifs, le budget fédéral de 1989 qui vient d'être déposé en avril est probablement l'un des plus importants des dix dernières années. Le plan fiscal du gouvernement vise deux grands objectifs :

- réduire le déficit qui est actuellement de 30,5 milliards $ à 15 milliards $ pour l'année financière 1993-1994;
- réduire les dépenses de fonctionnement de l'État (à l'exclusion des transactions en devises étrangères) de 20,5 milliards $ pour l'année financière actuelle à 3 milliards $ pour l'exercice 1993-1994.

Pour abaisser le niveau du déficit, le gouvernement met en place une série de mesures destinées à accroître ses revenus et à réduire ses dépenses. Côté revenus, les mesures annoncées représenteront une augmentation de 3,7 milliards $ en 1989-1990 et d'environ 7 milliards $ en 1990-1991.

Quant à la compression des dépenses, elle atteindra 2,1 milliards $ pour l'année financière 1990-1991, réduisant principalement les budgets de la défense (611 millions $), les transferts aux autres paliers de gouvernement (505 millions $), l'aide publique au développement (360 millions $), les sociétés de la Couronne (223 millions $) et les grands transferts et subventions (92 millions $). Le seul effet immédiat de ces réductions sur l'activité des ports viendra de l'élimination du programme de subventions « à l'Est de ». Ces subventions existent depuis le milieu des années 1960 et sont versées aux chemins de fer pour soutenir les exportations de céréales et de farine qui transitent par les ports de la côte atlantique.

Autre fait important pour les ports : le gouvernement a également annoncé qu'à la fin de l'été 1989, Transports Canada publiera un document de travail proposant un plan de rentabilité de ses installations et services aériens et maritimes. Le budget fédéral donne également des renseignements additionnels sur le projet de mise en œuvre de la nouvelle « Taxe sur les produits et services » (TPS).

• ***Ginette Morin***

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Slowly . . . but Surely

The year 1989 is off to a slower start in business activity when reviewed against the significant growth in cargo volumes and financial performance experienced by Ports Canada facilities during 1988, and that in spite of the below-normal activity in grain. For the first quarter of 1989, combined tonnage performance was 7 percent below the level of the corresponding 1988 period. At 16.4 million tonnes, this represented an overall decline of 1.2 million tonnes, with all but two ports, St. John's and Vancouver, being affected. While most commodities performed at close to historical levels, grain throughput fell one million tonne short of the 1988 first quarter performance, affecting several of the ports within the system.

Combined first-quarter 1989 net income was $9.3 million, compared with $10.1 million for the corresponding 1988 period.

The Canada Ports Corporation, with its seven divisional ports, experienced a 27 percent drop in cargo volumes, primarily grain and general cargo, resulting in net income for the quarter of $0.2 million.

With a 19 percent tonnage increase over the 1988 first quarter (largely in containers and liquid bulk), the St. John's Port Corporation experienced a strong net income result, exceeding the previous period by $50,000.

First-quarter traffic results at the Halifax Port Corporation were down 5 percent from the corresponding period in 1988. Grain movements were significantly below 1988 results, however, aided by a 14 percent increase in container volumes, first quarter net income performance surpassed the 1988 period by 49 percent.

The Saint John Port Corporation saw a 30 percent decline in cargo traffic from first quarter 1988, largely related to potash and grain. Net income performance for the quarter was also below the level of the corresponding 1988 period by $0.4 million.

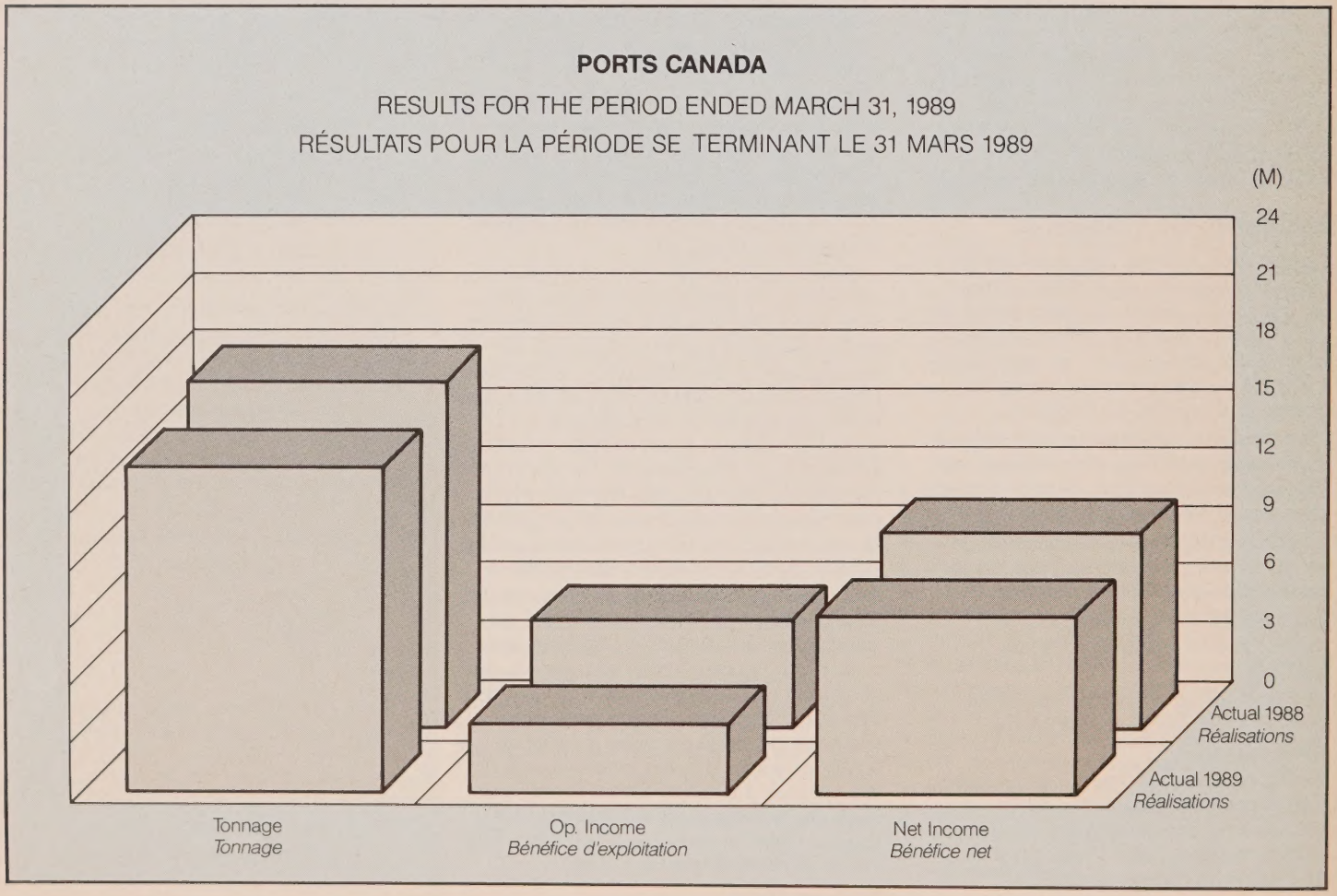
The Port of Québec Corporation's tonnage performance was affected by a significant reduction in grain throughput, contributing to an overall 170,000 tonne decline from 1988 first quarter results. Net income was $0.2 million lower than the corresponding period of 1988.

Cargo volumes at the Montréal Port Corporation for the first three months of 1989 showed a 5 percent reduction from 1988, with grain being 250,000 tonnes lower. Net income for the quarter fell short of the 1988 level by $1.3 million.

For the Vancouver Port Corporation, first quarter traffic results showed an increase of 2 percent over the 1988 period, coal and coke contributing 0.5 million tonnes and compensating for a drop in grain volumes of 0.2 million tonnes. Net income, at $6.5 million, was a $0.6 million improvement over the 1988 first quarter results.

The only port corporation untouched by the decline in grain volumes was the Prince Rupert Port Corporation, where grain movements were 12 percent higher than the previous period. Overall, cargo volumes were down by 0.5 million tonnes, largely related to lower coal throughput. Net income was $0.1 million short of the results for the corresponding 1988 period.

• *Grace Robinson*



Lentement . . . mais sûrement

L'activité commerciale s'annonce moindre en 1989 si on la compare à la croissance notable du volume de marchandises et au rendement financier qu'ont affichés les installations de Ports Canada en 1988, et cela même si l'activité céréalière était moins forte que la normale. Ainsi, pour le premier trimestre de 1989, le tonnage combiné — 16,4 millions de tonnes — est inférieur de 7 % à ce qu'il était à la même époque l'an dernier, ce qui représente une baisse globale de 1,2 million de tonnes, imputable à tous les ports sauf à ceux de St. John's et de Vancouver. Le volume de la plupart des marchandises manutentionnées s'est maintenu à peu près à ce qu'il était par le passé, mais le débit céréalier, par rapport au premier trimestre de 1988, a accusé une diminution d'un million de tonnes qui s'est fait sentir dans plusieurs ports du réseau.

Le bénéfice net enregistré pour le premier trimestre de 1989 a été de 9,3 millions de dollars, comparativement à 10,1 millions pour la même période l'an dernier.

La Société canadienne des ports, avec ses sept ports divisionnaires, a vu son volume de marchandises baisser de 27 %, notamment dans le secteur des céréales et celui des marchandises générales. Le bénéfice net pour le trimestre a été de 200 000 $.

Avec une augmentation de 19 % de son tonnage par rapport au trimestre correspondant l'an dernier (augmentation largement attribuable aux conteneurs et au vrac liquide), la Société du port de St. John's a enregistré un bénéfice net appréciable, de 50 000 $ supérieur à ce qu'il était l'an dernier.

Pour la Société du port d'Halifax, le trafic du premier trimestre est de 5 % inférieur à celui de l'an dernier. Le volume céréalier, sensiblement inférieur à ce qu'il était à la même époque en 1988, a été cependant compensé par un accroissement de 14 % du volume de conteneurs, ce qui fait que le bénéfice net pour le premier trimestre de 1989 a augmenté de 49 % par rapport à 1988.

La Société du port de Saint John a enregistré, par rapport au premier trimestre de 1988, une diminution de 30 % de son trafic de marchandises, en grande partie dans le secteur de la potasse et celui des céréales. Le bénéfice net du port pour le trimestre a également été de 400 000 $ inférieur à celui de 1988.

Le tonnage enregistré par la Société du port de Québec a été affecté par une réduction sensible du débit céréalier, qui a contribué à une diminution globale de 170 000 tonnes par rapport aux chiffres du premier trimestre 1988. Le bénéfice net du port a été de 200 000 $ inférieur à l'an dernier.

À la Société du port de Montréal, les volumes de marchandises manutentionnées pour les trois premiers mois de l'année révèlent une réduction de 5 % par rapport aux chiffres de 1988, le volume céréalier ayant baissé de 250 000 tonnes. Le bénéfice net pour le trimestre a été de 1,3 million de dollars inférieur à ce qu'il avait été en 1988.

Pour la Société du port de Vancouver, le trafic du premier trimestre est en hausse de 2 % par rapport à 1988, le charbon et le coke ayant contribué pour 500 000 tonnes à cette augmentation et compensé une baisse de 200 000 tonnes du volume céréalier. Le bénéfice net, qui s'établit à 6,5 millions de dollars, dépasse de 600 000 $ les résultats obtenus en 1988.

Le seul port qui n'a pas été touché par la diminution du volume céréalier a été celui de Prince Rupert, où le volume de céréales s'est accru de 12 % par rapport à l'an dernier. Globalement, les volumes de marchandises ont diminué de 500 000 tonnes, principalement en raison d'une diminution du débit charbonnier. Le bénéfice net du port a été de 100 000 $ inférieur à celui de l'an dernier pour la même période.

• ***Grace Robinson***

LETTER TO THE EDITOR

To the editor:

I was very impressed with Professor Ircha's article "Turbulent Post Environment: Adaptive Strategies" in the recent *Portus* (Winter, 1989). This article should be on the "must read" list for all port management professionals.

Thomas J. Dowd, FCIT
Affiliate Professor
University of Washington

Port of Rouen
Gearing Up for 1992

by Jean Werbowy *

Of the major ports comprising Europe's Northern Range between the Seine and Elbe rivers, Rouen is the furthest inland. Only Antwerp, about one hundred kilometers from the sea, is as close to its hinterland.

The Port of Rouen, located at the *far-end* of the Seine River estuary, lies 110 km from the English Channel. It serves a vast hinterland, whose enormous industrial and agricultural production and trade are strengthened by the presence of Paris. Thus, Rouen's hinterland generates the highest cargo capacity in France: 140 million tonnes, or one-half of French seaborne cargo.

This strategic location places Rouen among the ports whose future depends largely on factors affecting the production of goods and their markets. According to Professor A. Vigarié, Rouen is the typical example of a port that "gains its impetus from the earthly horizon."

Since a port is also shaped by its marine environment, the Rouen residents have always considered the quality of marine access to the port as essential. A channel has, therefore, been constructed to accommodate bulk carriers of up to 140,000 DWT and large container vessels, thus meeting the entire range of vessel-draft needs. Rouen's location makes it an ideal port of transit.

A link is provided not only by Rouen's channel, but also by the Seine. The river joins the port — which was established on the north shore of the river on the actual site of the city and then spread out, mainly along the south shore over about 20 kilometers — to three other port sites distributed evenly between Rouen and the sea: St-Wandrille/Le Trait, Port-Jérôme/Radicatel and Honfleur. These four sites comprise the Port of Rouen.

To maximize its natural advantages, the Port of Rouen has established a cost reduction policy. A development plan implemented in early 1988 covers the five years leading up to the establishment of Europe's single market, 1992.

The two-pronged development plan consists of capital projects totalling 905 million francs, reinforced by a new organization of labor that includes a social plan, the financing of which was finalized in an agreement signed on January 28, 1988.

The objective is to encourage the overall growth of traffic and establish Rouen as Europe's major agri-food port in 1992.

Consolidation-Distribution Role Affirmed

Activity at the Port of Rouen is very stable (annual traffic of over 20 million tonnes) and is broken down as follows:

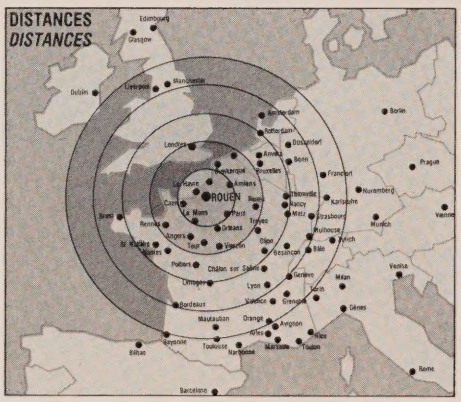
- consolidation-distribution traffic (53 percent): agri-food products (grain, sugar, flour), forest and petroleum products;
- traffic related to industrial platform (37 percent): refining and petrochemical industry of Rouen and Port-Jérôme, Rouen's fertilizer platform, paper manufacturing;
- liner service (10 percent): trade on ranges where commercial relations with France are very important and may give rise to regular calls (West African coast, Indian Ocean, Near East, West Indies, Brazil, United Kingdom and Ireland, northern Europe).

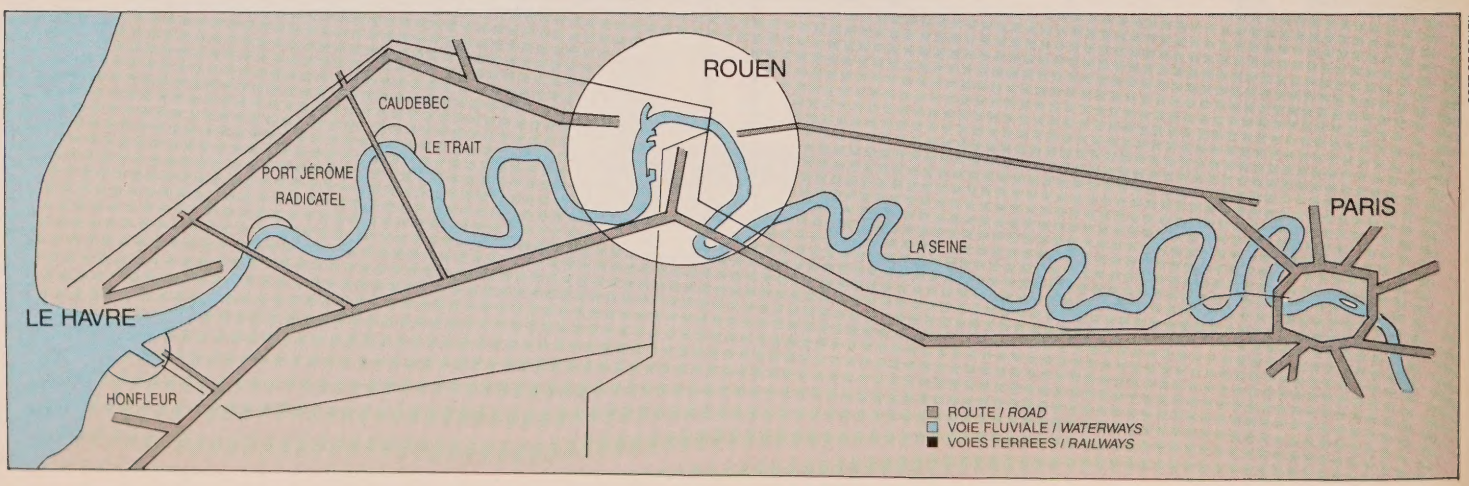
This overall stability indicates the permanence of the Port of Rouen's advantages, which are responsible for the development of this traffic:

- As an inland port, Rouen is located near the production and consumption centers. The predominance of traffic related to consolidation and distribution highlights how essential this privileged geographical location is;
- Rouen has seen the future of its industrial platforms confirmed with the restructuring of various sectors in recent years (petrochemical, fertilizer, paper, etc.);
- Rouen is the best port-of-call for liner services in geographical zones where trade with France is very important.

The effects of these advantages have been reinforced by a number of recent decisions:

- creation of a multimodal center in the city — "Multicargo Rouen";
- decision to build the Calais-Tours highway via Rouen; construction of the Le Havre-Amiens highway with a link to Rouen;
- implementation by the CNC of unit trains and special relations with Rouen, with resulting price reductions of 28 to 33 percent;
- expansion (up to 1,000 tonnes) of the Bray-Nogent section of the eastern-Seine river link.





Suitable and Reliable Marine Accesses

The Port of Rouen has adapted the channel to its needs. Whether on the incoming tide — which facilitates the ship's passage — or on the outgoing tide, it can accommodate fully-loaded 40,000-tonne vessels and not fully loaded vessels of 140,000 tonnes.

The channel meets the needs of the industrial traffic moving through the Port of Rouen; in particular, it has enabled Rouen to become Europe's major grain exporting port.

As for liner services, Rouen accommodates all container vessels up to 2,000 TEU. Here, again, the port has no difficulty serving the ranges in which it specializes.

Rouen's good marine accessibility is the result of continuous efforts by generations of inhabitants.

The channel's attributes have changed decisively in recent years.

First, a major project, completed in 1962, altered the channel in the southern part of the estuary after breakwaters were constructed. The result was a 2.5 m increase in draft. The estuary's development was completed between 1977 and 1980 with breakwater extensions and elevations. Finally, work on the river helped produce the present drafts on incoming tide — 9.8 m for the lowest tides and 11.8 m for the highest.

What remained was to provide 10 m sailing out on all tides. Plans were drawn up in 1983, and work is now in progress. The purpose is to increase the present 9.8 m draft to 10 m on outgoing tide.

The Seine is one of the most reliable rivers in Europe. Three radar stations, commanded from the estuary, operate as aids to navigation. They complement Rouen's pilot station, whose able pilots cooperate with others involved in port activities, helping to make maximum use of the channel.

Attractive Competitiveness stimulated by Development Plan

Actions aimed at attaining this objective are characteristic of the seriousness and effectiveness for which Rouen's inhabitants are known. These actions fall into two categories: capital projects and organization of labor.

Work totalling 905 million francs for the 1988-1992 period involves four types of actions designed to:

- Concentrate traffic in operating terminals

This concentration will bring about economies of maintenance and structure. It enables operators to lower their costs, as each terminal's fixed costs cover larger quantities of cargo.

Restructuring traffic and improving performance find their application in four types of terminals — agri-food, forest products, industrial bulk and container — for a total of 345 million francs in capital projects.

- Increase productivity by improving equipment (high-power cranes with variable lifting speeds, handling and distraining techniques, improved reliability)

The cost of upgrading equipment is 100 million francs.

- Take full advantage of the Port of Rouen's strategic location

Land transportation costs to and from the Port of Rouen are particularly competitive for the Ile de France, Normandy, Central and Picardie regions. The planned highway connections will improve this situation, as they expand eastward and southwestward into the hinterland.

In order to further strengthen this advantage, an 80 million franc program has been planned to improve traffic flow in the port (development of "Boulevard Maritime").

Complete marine access works, which will allow either increased cargo transit capacity (for bulk carriers) or extended sailing slots (for container ships) contained in the "sustained 10 m sailing" on outgoing tides.

Undertake two complementary key actions to lower maintenance dredging costs: estuary development (extension of breakwaters) and restoration of calibration dikes, totalling 380 million francs in new marine works.

The second area involves the new organization of labor.

The port's improved competitiveness will lead to surplus manpower. The number of employees will have to be reduced gradually, and as humanely as possible, whence the establishment of a social component within the Port of Rouen's development plan.

Between mid-1987 and mid-1988, the *Port Autonome de Rouen* (Port of Rouen Authority) was to have reduced its own staff of 700 by 15 percent, with the early retirement of 105 employees.

The social plan, signed at the end of January by the *Port Autonome de Rouen*, the *Chambre syndicale des entrepreneurs de manutention*, and the *Syndicat des ouvriers* dockers, provided for the departure of 400 dock workers before 1 July 1988; that is, just over 25 percent of the previous total of 1,515 persons.

Discussions about a social plan and improvements in labor productivity took place simultaneously. In total, 33 agreements were concluded, resulting in a major reshaping of Rouen's collective agreement. These agreements involved increasing flexibility in the use of gangs, in the methods of remuneration or compensatory leave, or in the composition of the gangs themselves.

The agreements have resulted in a 20-25 percent increase in labor productivity, compared to the 1 January 1986 figures. These increases have come as a result of agreements related to labor and the implementation of rationalization techniques (generalization of load unit systems: prebound units, flats, bolsters, etc.)

Spectacular results have already been recorded for traffic that has been affected by

the various measures; at the Petit-Couronne terminal, the cost of handling sacks of flour has dropped to 50 francs per tonne, from 120 francs a year ago.

Europe 1992: Meeting the Challenge

The Port of Rouen stands out from its competitors as the only major port where exports exceed imports. Almost 60 percent of Rouen's traffic is outbound.

The most significant contribution to these exports comes from the agri-food sector. Rouen leads European ports in the export of grain: between seven and nine million tonnes, depending on harvests and the world market supply and demand. In addition, the Port of Rouen alone handles two-thirds of French seaborne exports of wheat and barley. It is also one of the world's leading ports for the export of flour and sugar. This shows the importance of Rouen's contribution to trade outside France. The Port of Rouen accounted for one-third of the 32 billion franc agricultural surplus in 1987.

Rouen is Europe's leading grain exporting port. Located in the heart of Europe's most productive wheat-growing region, the Port of Rouen was selected as port of reference by the European Community. The quotation "FOB Rouen," also used by the International Wheat Commission, confirms Rouen's position in this field.

The Port of Rouen's objective is to become the major agri-food port in Europe by 1992. This means maintaining its present share of the market and developing the intra-community traffic (toward Italy and the Iberian Peninsula) that will increase grain exports.

To achieve this goal, the Port of Rouen intends to use its success in the grain sector as a model for other traffic, agri-food traffic being the first.

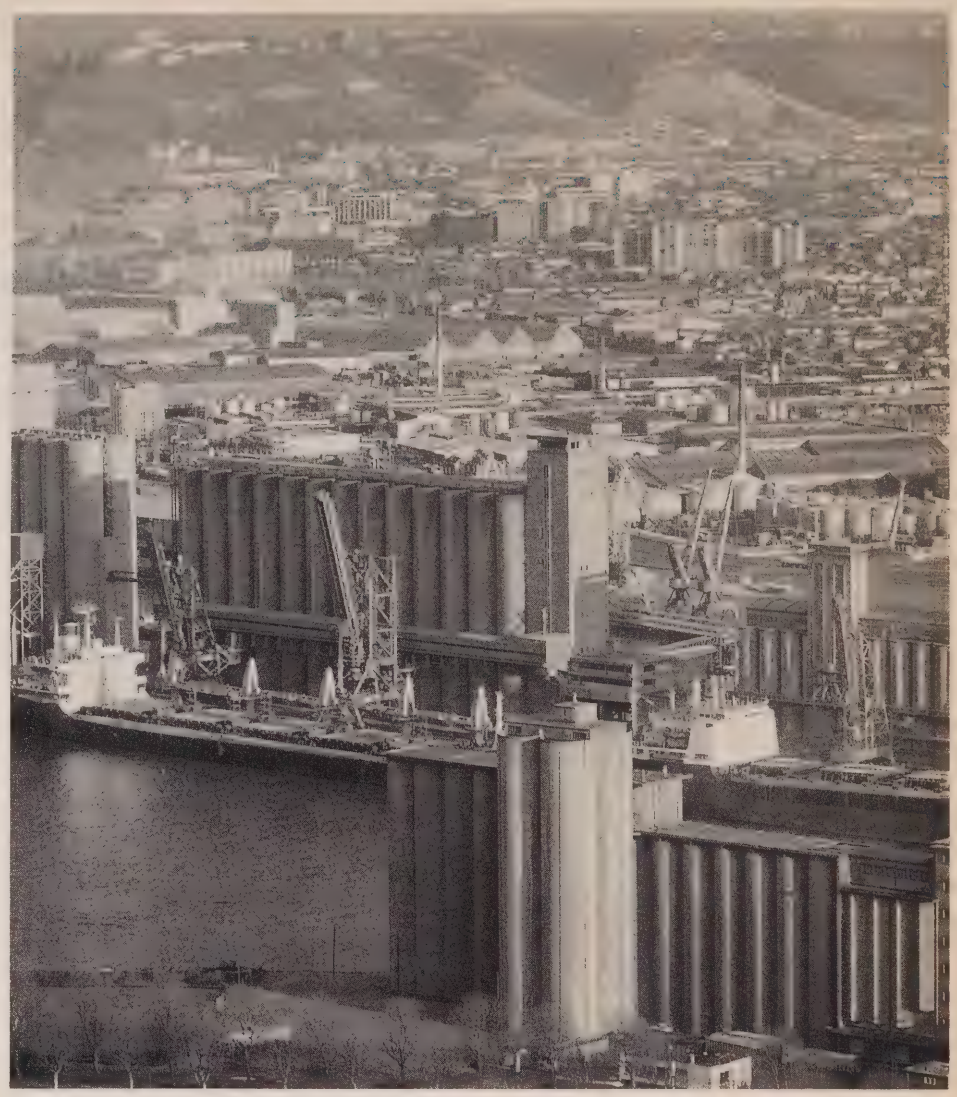
Rouen's achievements in the grain sector are many: concentration of methods, well-managed organization, strong competitiveness, suitable marine accesses, good equipment, operators with European scope and dynamic private/public investment structure. The port plans to implement the same methods for agri-food traffic.

In addition, the Port of Rouen is preparing for new agri-food industries with the establishment of an agri-food terminal at Grand-Couronne. This terminal will handle cargo destined for fledgling agri-food industries (trituration of protein-rich grains, ethanol, animal fodder) or goods produced by these industries.

Similarly, the Port of Rouen is attempting to maintain the high traffic level of container lines that have made a name for the port, and is working with the port community at large to diversify the market connections designated as priorities.

These actions come within the framework of a single European market. For Rouen, this means more opportunities to start projects, and prospects of a new prosperity to which an expanded market will give rise.

The Port of Rouen has always, by nature, been instrumental in the growth of its hinterland. In the same way, its prosperity has always paralleled that of the industry and agriculture alongside which it has developed. For the Port of Rouen, a single-market Europe is an opportunity for renewed growth. ⚓



PORT OF ROUEN

ROUEN IN THE NORTHERN RANGE

Ports	Vessels	Outbound Traffic*	Inbound Traffic*	TEU	Refined	Grain Products*
Rouen	3,699	12.9	8.9	922,185	6.3	7.6
Le Havre	6,782	9.0	38.1	4,483,339	5.1	0.9
Dunkirk	6,611	7.7	24.6	762,553	4.3	0.7
Zeebrugge	10,085	7.1	7.9	2,270,020	0.9	0.2
Gand	4,469	5.1	18.9	47,000	1.5	3.3
Antwerp	16,446	36.5	53.6	11,090,689	16.6	3.1
Amsterdam	4,236	7.2	21.2	592,530	12.5	0.4
Rotterdam	30,105	51.8	197.1	24,498,702	31.6	2.4

*in millions of tonnes
Source:Traffic of world ports — J.M.M. no. 3550

This table covers ports whose telelloyd daily follows the position of inbound and outbound vessels daily. Rouen is first for grains, third for outbound traffic, and third in France for containers.

**Jean Werbowy is employed by the Rouen Port authority and works in External Relations and Communications.*

Electronic Data Interchange – International Standards Taking Root

*by Niels Rasmussen**

Electronic Data Interchange (EDI) is a promising technique for reducing the cost of international trade. The First National Bank of Chicago estimates, for example, that the United States alone could save US$ 6.5 billion annually by generating trade documents electronically. The bank specifies that for each of the 23 million shipments out of the U.S. each year, there are 360 original copies of 46 separate documents. However, EDI is still an emerging technology far from having reached its full potential.

A recent study by the International Data Corporation (IDC) found that there were approximately 300 EDI users in Canada in 1988. This number is expected to grow to between 3,500 and 4,000 by 1992. IDC also found that the growth of EDI in Canada over the past two to three years has largely been a consequence of a "join EDI or else" attitude on the part of a few large companies. These companies are buyers with a large number of trading partners who can realize the benefits of EDI much quicker than their suppliers. There are no hard figures that show when EDI becomes cost-effective but 75–100 documents per month seem to be required to reach the break-even point.

One of the more important factors that will contribute to the growth of EDI over the next several years is the development and acceptance of international EDI standards — Edifact or EDI for Administration, Commerce and Transport. These standards are developed under the auspices of the Working Party Four of the United Nations Economic Commission for Europe (UN/ECE WP4), responsible for trade facilitation issues. Both Canada and the United States are full members of the UN/ECE; and since 1985, the development of international EDI standards has been a joint North American/European effort. In accordance with common UN practices, the UN/ECE has appointed regional *Rapporteurs* to coordinate Edifact work and recommend actions for formal approval. Each Rapporteur has a support team made up of delegates from national standards groups and international interest groups. Their role is to develop and maintain the Edifact standards. This is done by consensus. When agreement has been reached on a new Edifact message, the Rapporteurs recommend the message for formal approval as Draft Document-status 0, draft for Trial Use-status 1, or United Nations Standard Message (UNSM)-status 2, as appropriate.

Joint Edifact message development meetings of Rapporteurs and their support teams are held twice a year. The latest joint development meeting was held in Washington last April. The purpose of that meeting was to advance the work of message development and prepare new messages for submission to the UN/ECE WP4 for formal approval at their next meeting in Geneva in September 1989.

The first UNSM, the international invoice message, was approved in September 1988. This was an occasion for great rejoicing as it represented the culmination of three years of hard work. However, it was clear that before Edifact would become a productivity tool to be considered seriously by the international trading community many more messages were needed covering data transfer needs in areas of Customs, transportation, finance, insurance, materials management and others. The support teams, therefore, continued their efforts and at the end of the April meeting Rapporteurs could announce that at the September WP4 meeting, one new message, the Purchase Order, will be submitted for UNSM status and six messages will be submitted for Draft for trial use status. In addition to these messages, a further eighteen are under active development and the list is growing. Among the six messages that will go for trial use, the Customs Declaration, the Customs Response messages and the International Forwarding and Transport Message Framework (IFTMFR) are of particular interest to ports and the international transport community.

As these Edifact messages obtain official status, whether as UNSMs or as Draft messages for trial use, it is expected that software companies and network providers will develop the necessary programs and services to allow Edifact to be put to use with the same ease and at the same cost as the presently used national EDI standards. Already, U.S. Customs is piloting the Edifact Customs Declaration Message with Texas Instruments, Philips and I.C.I. and both the International Trade Facilitation Council in New York and the Canadian Standard Interchange Facility (Cansif) in Vancouver have announced their intention to pilot the IFTMFR transport message later this year.

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IAPH CONFERENCE

The UN of Ports

*by George C. Simms**

This year marks the 34th anniversary of the foundation of the International Association of Ports and Harbours (IAPH), an organization often referred to as "the United Nations of Ports". When established in 1955, the principal aim of IAPH, as laid out in its Constitution, was: to increase the efficiency of ports and harbours through the development and dissemination of information useful to port and harbour administrations, through providing them with an opportunity to associate together for the purposes of furthering knowledge in the fields of port administration, operation, development and promotion; thereby advancing international friendship and understanding and the growth of waterborne commerce.

This sounds like an extremely tall order for any organization. However, there can be no better evidence of this aim being achieved than the successful completion this year of the 16th IAPH World Ports Conference held April 22-28, 1989, in Miami Beach, Florida. This was a well-organized and well-attended event, hosted by the Port of Miami, with something for everyone in the port business. The overall theme for this year's conference was "Ports-The Intercontinental Connection". The total conference program consisted of a broad range of both business and technical topics presented by expert speakers from around the world, together with a superb social program for delegates and spouses.

In due course, proceedings of the conference will be available. Meanwhile, the purpose of this review is to highlight some of the more significant presentations, many of which addressed concerns shared by representatives from over seventy countries around the world.

The papers delivered over the week-long event fell essentially into the following three broad areas:

- Geographic representation
- Technical reports
- Major issues

Geographic Representation

IAPH recognizes three global regions from which it draws its membership: Europe/Africa, The Americas, and The Asia/Pacific. Each of these accounted for a program working session consisting of a major paper and presentations by other key speakers.

Europe/Africa

A major paper for the working session on Europe/Africa was presented on behalf of the Dutch Minister of Transport and Public Works, and addressed what communities expect from ports. Among other very useful observations, the paper stressed the complexity of the European port environment, and the often conflicting expectations faced by individual ports, especially those serving the needs of highly industrialized area. Specific reference was made to the response of the larger Dutch ports to new European trade developments. The paper was followed by three additional presentations.

Fernand Suykens, general manager of the Port of Antwerp and member of the executive committee of IAPH, dealt extensively with the tremendous diversity of European ports and the difficult road towards a common European seaports policy. The gradual process of harmonization and liberalization in European trade, and its impact on ports, served as a backdrop against which to explore particular challenges following full economic integration targeted for 1992. According to Suykens, it is not possible to progress faster with the formulation of a common European seaport policy than with the implementation of the European Transport Policy or the European integration taken as a whole, since ports are in most cases component parts of the national economy.

In an operational review of Mediterranean ports, Fernando Taboada, director general of Puertos y Costas, Spain, outlined the progressive development of world political and economic circumstances which have strengthened the strategic position of the Mediterranean in maritime transport, and consequently that of its ports as points of connection with overland transport networks. While entry in the EC and the elimination in 1992 of customs barriers within the Community suggests an overall reduction in trade with non-EC countries, other factors supporting new trade exchanges include progress in Middle East peace talks, economic growth of North African countries, the rich tourist and cultural developments around the Mediterranean, more open trade relations with the Soviet Union, and forecast increase in overseas trade between Europe and the Far East, some of which can be expected to pass through Mediterranean ports. Greater attention is being focused on improvements in overland communication networks linking European production and consumer centers and Southern European ports, as well as improvements in the running of these ports, especially with respect to financial, labor and management aspects.

An excellent overview was given by Jean Michel Moulod, general manager of the Abidjan Port Authority, of regional port cooperation in Africa. After giving informative background on trade and port activities in Africa, the institutional framework in which a high level of regional cooperation is achieved was highlighted. The effectiveness of port management associations is demonstrated, using the Port Management Association of West and Central Africa (PMAWCA) as a case study. Attention was focused on consultation, training, a standardized approach to port administration, management and operation, the use of a Port Assistance Fund to finance development, and the extensive use of symposiums as a means of sharing technical information and developing performance indicators.

Canada and The Americas

A major presentation for this session was delivered by the Chairman of the Panama Canal Commission. It combined an elaborate audio-visual overview of the growth and development of the Panama Canal with statistics on its current and forecast performance. In spite of current trends in ship design beyond the handling capabilities of the Canal, an optimistic outlook was taken in this presentation. The paper was followed by four additional presentations.

Erik Stromberg, president of the American Association of Port Authorities, highlighted the tremendous change which has taken place over the past decade in the nature and calibre of the port director. Increased competition, a changing economic and political operating environment, and numerous related factors have increased the turn-over rate of directors and placed less focus on technical and engineering skills and more attention on marketing and general management skills. Observations were based on recent surveys carried out by AAPA among US ports.

An important part of this session was a strategic overview of the Canadian port system by Jean Michel Tessier, president and chief executive officer of the Canada Ports Corporation. Beginning with a clarification of the administrative structure of ports in Canada, Tessier described Canada's trading framework, the importance of its transportation and port system, and the significant role played by Ports Canada, outlining its strategic response to major issues in a new and more highly competitive business environment. Specific issues addressed included leadership, cost reduction, strategic marketing, new trade policy, port community awareness, port development, and port rationalization (for extracts of Tessier's

speech, see page 27).

The impact of strategic planning on ports was addressed by D. Welch, executive director of South Carolina State Port Authority. The primary object of this presentation was to view the port as being in the "line-of-fire" of extensive strategic planning being carried out by goods producers, shippers, the transportation modes, major port users, and numerous parties having a vested interest in lower transportation costs. Strategic planning, then is an essential part of the highly competitive environment in which ports must operate. Consequently, the port's own strategic plan must be viewed as an important management tool.

A final presentation in this session was made by Manuel LeSaga, vice president of Southeast Bank, Miami, Florida.

Asia and The Pacific

The major paper for this session was presented on behalf of Tatsuo Miyazaki, Mayor of Kope, Japan, describing Japanese ports and giving an overview of trade and transportation in that country. This was a comprehensive and very informative paper. It addressed the advancement of Asia-Pacific economies and changing trade patterns, the future of the transportation modes in Japan, and the present status and future prospects for Japanese ports. It included reference to coping with the relocation of manufacturing bases, achieving higher levels of utilization for port space and how ports must deal with the age of internationalization. The long-term perspective is that new growth centers led by South Korea and Taiwan, as well as new manufacturing countries such as Malaysia, Thailand and the Philippines make the Pacific Rim area one of the fastest growing regions of the world. The center of gravity of world trade and industry is moving more to the Far East. Japanese ports are attempting to deal with this development.

Following this major paper, five additional papers were presented.

Another excellent presentation for the Asia-Pacific region was delivered on Hong Kong by Ian Strachan, deputy director for the Hong Kong Government Marine Department. The remarkable expansion in cargo throughput which has continued for Hong Kong and major developments which have taken place to accommodate this growth, were highlighted. The paper also dealt with the implications of China resuming sovereignty over Hong Kong in 1997. The outlook appeared optimistic.

The Malaysian port overview by H. Abdullah, general manager of Kelang Port Authority, brings out a very interesting approach to port policy in which the privatization of port activities is being achieved within an overall framework of coordinated port system management. While the private sector is invited to take over commercial port activities and facilities, port authorities are being centralized as a purely regulatory function. For the purpose of establishing their primary role, ports are classified according to a national port master-plan. A further highlight of this paper was the development of reliable port performance indicators.

The paper by R. Snodgrass, chief executive of Taranaki Harbour Board, gave an excellent overview of the extensive privatization process taking place on the New Zealand waterfront. Under the new legislation, ports are being set up as fully private companies with all shares ultimately held by the public. These initiatives are aimed at raising the level of waterfront productivity and regaining lost credibility with the transportation and trade sector. There are some similarities to the Australian situation.

The impact of Australian waterfront development on ports was dealt with by N. Samuels, chairman, Port of Geelong Authority. The general philosophy and considerable detail was provided in this paper for the Interstate Commission investigation

"Strategic planning . . . is an essential part of the highly-competitive environment in which ports must operate."

of Australian waterfront activity. Importance is attached to the realization by Australian authorities of the significant risk to trade of an inefficient port industry. This was a good example of the trade off between regional and national benefit which must be recognized in dealing with ports. Changes proposed for Australia will effect planning, management, marketing, operations, labor, and cargo documentation.

The Korean port overview by Il-Soo Jun, director, Port Research, Korea Maritime Institute also dealt with the privatization of ports in light of scarce resources, under a national port master plan.

Technical Reports

One working session of the conference was oriented around the presentation of reports by the chairmen of IAPH Technical Committees. Reports were made on various technical developments, as well as past activities and future plans for the following Committees:

- International Port Development
- Port Safety, Environment and Construction
- Cargo Handling Operations
- Legal Protection of Port Interests
- Public Affairs
- Trade Facilitation

A good example of very useful documents resulting from this session was the *IAPH Guidelines for Environmental Planning and Management in Ports and Coastal Area Developments – 1989*, prepared by the Port Safety, Environment and Construction Committee.

Major Issues

This final group of topics includes a session on communications and a final one on critical port issues.

Communications

The major paper for this session was by Jean Smagghe, general manager, Port of Le Havre. This paper deals with the impact of ship design on ports and is a very comprehensive treatment of the linkage between technological change related to ships, equipment and the port. The "chicken-and-egg" situation was addressed to help ports anticipate changes in port facility requirements. Ports are sandwiched between land and sea transport, but port sites are being adapted as much as possible to new conditions. More and more ports are becoming highly specialized to handle specific cargo, instead of the traditional multi-purpose terminal. The paper was an excellent source of reference for planning purposes.

Other Issues

Following the major paper there were three additional presentations.

Probably the most comprehensive paper on port issues was an overview of port development in the United States, providing in considerable detail, the status of the port system, major issues, and the outlook for future years. The paper by John Pisani, director, Office of Port and Intermodal Development, Marine Administration, was an excellent treatment of intermodal development in the United States and its impact on ports.

Of a more technical nature was a presentation on the use of fibre optics in port maintenance, delivered by representatives of Siemens.

The final paper in this session dealt with the role of port labor in port operations.

Overall Assessment

In attempting to stay abreast of developments in the various aspects of port planning and management required to operate ports, we attend many conferences and seminars, some of which are not always as directly related to the real business at hand as we would like. As a forum for the exchange of technical and business information directly related to ports, and as a means of jointly searching for solutions to common port development problems, the 16th IAPH World Ports Conference was an excellent event in which over 600 delegates from more than seventy countries participated. When the proceedings of the conference are available, they should be reviewed in detail for papers which are relevant to our respective areas of concern.

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Rouen :
En préparation pour l'Europe de 1992

par Jean Werbowy *

Des grands ports qui composent la rangée Nord-Continent, entre la Seine et l'Elbe, Rouen est le plus ancré dans les terres. Seul Anvers, à une centaine de kilomètres de la mer, est autant en prise directe avec son arrière-pays.

Le port de Rouen, situé au fond de l'estuaire de la Seine, est à 110 km de la Manche. Il sert un vaste hinterland dont la puissante activité de production industrielle et agricole, autant que les fonctions d'échanges, sont renforcées par la présence de Paris. L'hinterland rouennais génère ainsi le plus fort potentiel de marchandises de France : 140 Mt, soit la moitié du potentiel français transitant par voie maritime.

Cette position place Rouen dans la catégorie des ports dont le destin est influencé de façon primordiale par les facteurs qui règlent l'évolution de la production des marchandises et leurs marchés. Rouen, dans la terminologie du Professeur A. Vigarié, est l'exemple type du port qui « reçoit son impulsion de l'horizon terrestre ».

Mais, un port est modelé également par son environnement marin; ce qui conduit à souligner l'importance vitale que les Rouennais ont toujours portée à la qualité des accès nautiques de leur port. Rouen a développé un chenal qui assure le passage de vraquiers dont le port en lourd peut atteindre 140 000 t et les grands porte-conteneurs intégraux, soit l'éventail complet des besoins en cale des trafics qui trouvent dans Rouen un port de transit optimum par sa proximité.

La Seine constitue, en même temps que le chenal maritime de Rouen, un trait d'union. Elle relie le port — né sur la rive nord du fleuve sur le site même de Rouen et qui s'est étendu ensuite, principalement en rive sud, sur une vingtaine de kilomètres — à trois autres sites d'activités portuaires qui se répartissent régulièrement entre Rouen et la mer: St-Wandrille/Le Trait, Port-Jérôme/Radicatel et Honfleur. Ce sont ces quatre sites qui forment le port de Rouen dans sa totalité.

Pour développer pleinement ses caractéristiques, le port de Rouen élabore une politique de réduction des coûts. Un plan de développement, mis en oeuvre au début de 1988, couvre les cinq années qui mènent au marché unique européen.

Ce plan de développement s'appuie sur deux volets. Un ensemble d'investissements de productivité de 905 millions de francs d'une part. Il est renforcé, d'autre part, par une nouvelle organisation du travail que prévoit un plan social dont le financement a été parachevé par un accord signé le 28 janvier 1988.

L'objectif poursuivi vise le développement général du trafic en même temps que de faire de Rouen le grand port de l'agro-alimentaire de l'Europe de 1992.

Une vocation de collecte-distribution affirmée

L'activité du port de Rouen marque une grande stabilité au-dessus de la barre des 20 millions de tonnes de trafic annuel, qui se décompose en :

- trafics de collecte-distribution (53 % : produits agro-alimentaires (céréales, sucre, farine), produits forestiers et produits pétroliers.
- trafics liés à la plate-forme industrielle (37 % : raffinage et pétrochimie de Rouen et Port-Jérôme, plate-forme engrais de Rouen, fabrication du papier.
- trafics de lignes régulières (10 %) : échanges sur les ranges où les relations commerciales avec la France sont très importantes et peuvent donner lieu à des escales bien alimentées (Côte occidentale d'Afrique, Océan Indien, Proche-Orient, Antilles, Brésil, Royaume-Uni et Irlande, Europe du Nord).

La stabilité globale montre la permanence des atouts du port de Rouen qui sont à la base du développement de ces trafics :

- Rouen est un port à l'intérieur des terres et donc proche des centres de production et consommation. La nette prédominance des trafics liés à la collecte-distribution met une lumière le caractère essentiel de cette situation géographique privilégiée;
- Rouen a vu ses plates-formes industrielles confortées dans leur avenir lors des mouvements de restructuration qui ont eu lieu ces dernières années dans différents secteurs (pétro-chimie, engrais, papiers . . .);
- Rouen est le port des meilleures escales pour l'armateur de ligne régulière dans les zones géographiques où les échanges avec la France sont très importants.

Ces divers atouts ont leurs effets renforcés par plusieurs décisions récentes:

- création d'un centre multimodal dans l'agglomération, « Rouen Multi-marchandises »;
- décision de construire l'autoroute Calais — Tours par Rouen; création de l'autoroute Le Havre-Amiens avec raccordement à Rouen;
- mise en oeuvre, par la C.N.C., de relations particulières et trains-blocs avec Rouen ayant pour effet des réductions de prix de 28 à 33 %;
- mise au grand gabarit (1 000 tonnes) de la section Bray-Nogent de la liaison fluviale Seine-Est.

Le port de Rouen a résolu l'adaptation de son chenal à ses besoins. Qu'il s'agisse de la montée — facilitée par le flot qui accompagne le navire — ou de la descente, les navires de 40 000 t à pleine charge et 140 000 t allégés sont reçus à Rouen.

Cela est suffisant pour les trafics industriels que le port de Rouen opère et, en particulier, cela a permis à Rouen de devenir le premier port européen exportateur de céréales.

En matière de lignes régulières, Rouen reçoit tous les porte-conteneurs jusqu'à 2 000 EVP de capacité et, là encore, le port ne rencontre pas de problèmes pour la desserte des ranges dont Rouen est le spécialiste.

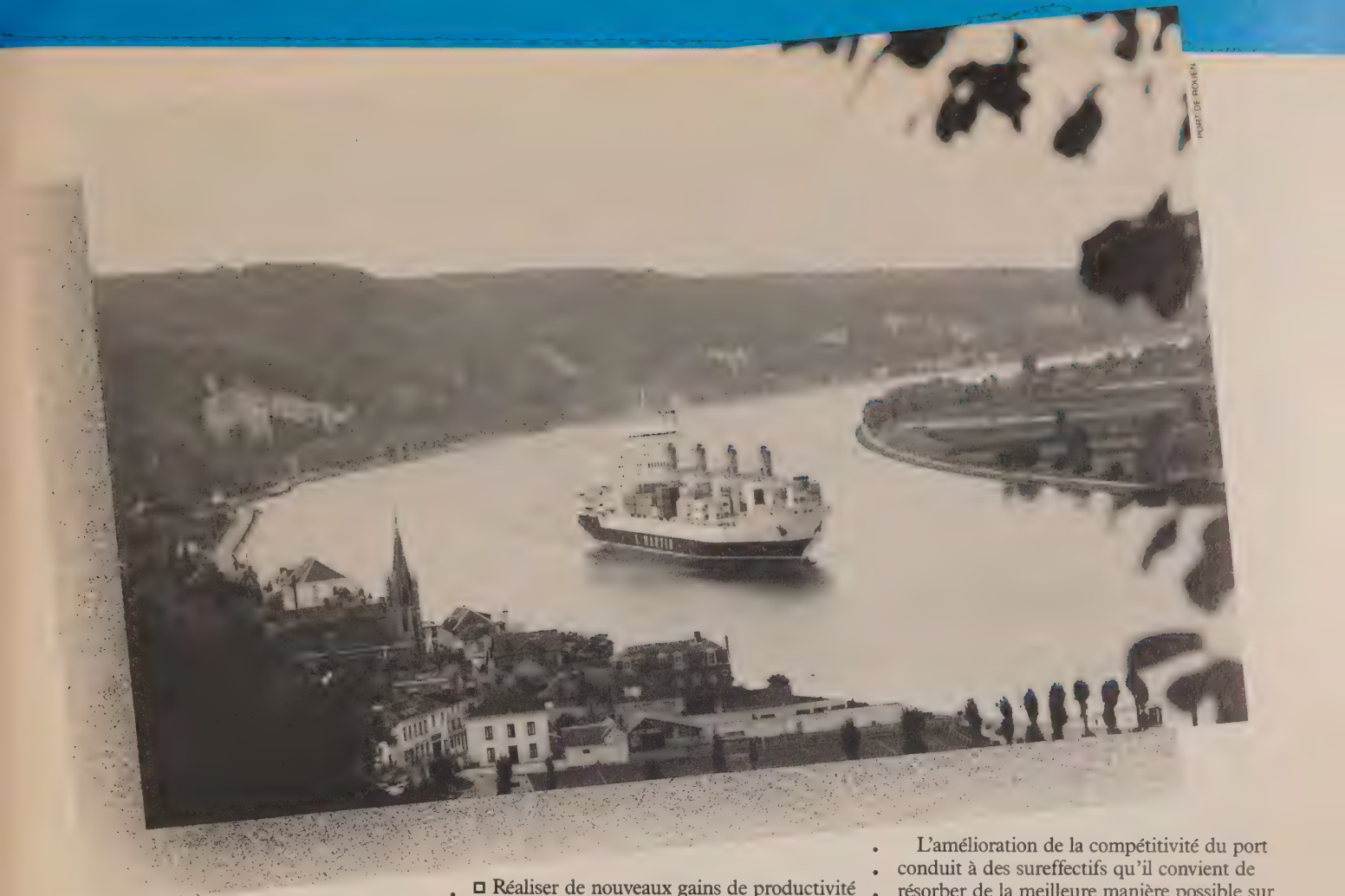
La bonne accessibilité nautique à Rouen est le résultat d'efforts déployés de manière continue par des générations de Rouennais.

Les années récentes ont été décisives dans le changement d'échelle des caractéristiques du chenal.

Tout d'abord, un vaste ensemble de travaux, achevés en 1962, a permis après endiguement de faire basculer le chenal dans la partie sud de l'estuaire. Une augmentation de tirant d'eau de 2,5 m en est résultée. L'aménagement de l'estuaire a ensuite été complété par des travaux de prolongement et surélévation des digues, menés entre 1977 et 1980. Des travaux en rivière, enfin, permettent d'obtenir à la montée les tirants d'eau actuels, entre 9,80 pour les plus faibles marées et 11,80 m pour les plus fortes.

Restait à entreprendre ce que l'on désigne sous le terme de descente à 10 m à toutes marées. Il s'agit de travaux décidés en 1983 et en cours d'exécution. L'objectif est de porter de 9,80 m actuellement à 10 m le tirant d'eau admissible à la descente en marée directe.

La Seine est, parmi les fleuves européens, l'un des plus sûrs. Trois stations radars commandées depuis l'estuaire fonctionnent comme aides à la navigation. Elles sont un



complément à la prestation de la station de pilotage de Rouen dont le savoir-faire des pilotes et la coopération avec les autres intervenants de la vie portuaire permet de tirer parti au maximum du chenal.

Une compétitivité attractive stimulée par le plan de développement

Les actions destinées à atteindre cet objectif sont caractéristiques du sérieux et de l'efficacité reconnus aux Rouennais. Ces actions se regroupent en deux volets : un volet investissement et un volet organisation du travail.

Les investissements, qui totalisent 905 millions de francs sur la période 1988-1992, concernent quatre types d'actions qui visent respectivement à :

- Regrouper les trafics sur des terminaux performants.

La concentration ainsi opérée engendre des économies d'entretien et de structure. Elle permet aux opérateurs d'abaisser leurs coûts, les charges fixes de chaque terminal étant rapportées à une quantité plus importante de marchandises traitées.

La restructuration des trafics et l'amélioration des performances trouvent leur point d'application dans quatre types de terminaux :

- agro-alimentaires
- produits forestiers
- vracs industriels
- conteneurs

pour un investissement de 345 millions de francs.

- Réaliser de nouveaux gains de productivité par l'amélioration de l'outillage (grues de forte puissance et vitesse de levage variable, techniques de manutention et de saisissage, fiabilité améliorée).

Les investissements à réaliser pour l'amélioration de l'outillage se montent à 100 millions de francs.

- Tirer pleinement parti de la situation privilégiée du port de Rouen.

Les coûts de transports terrestres, depuis et vers le port de Rouen, sont particulièrement compétitifs pour la région Île de France, la Normandie, le Centre et la Picardie. Les liaisons autoroutières décidées vont améliorer cette situation et l'étendre à l'est et au sud-ouest de l'hinterland.

Pour renforcer encore cet atout, un programme de 80 millions de francs est prévu pour permettre une meilleure circulation dans le port (aménagement du Boulevard Maritime).

- Achever l'adaptation des accès nautiques pour permettre soit l'augmentation des cargaisons (vraquiers), soit l'élargissement des créneaux de navigation (porte-conteneurs) contenu dans le programme « descente à 10 mètres ». Entreprendre deux actions clefs complémentaires pour abaisser le coût des dragages d'entretien : aménagement de l'estuaire (prolongement des digues) et restauration des digues de calibrage, le montant des investissements nautiques à réaliser s'élevant à 380 millions de francs.

Le second volet concerne la nouvelle organisation du travail.

L'amélioration de la compétitivité du port conduit à des sureffectifs qu'il convient de résorber de la meilleure manière possible sur le plan humain, d'où la mise en place d'un volet social au sein du plan de développement du port de Rouen.

En ce qui concerne ses propres agents, le Port Autonome aura réduit ses effectifs, entre mi-1987 et mi-1988, par des départs en pré-retraite de 105 personnes sur un effectif de 700, soit d'environ 15 %.

Ce plan social, signé fin janvier entre le Port Autonome, la Chambre Syndicale des Entrepreneurs de manutention et le Syndicat des ouvriers dockers, aura permis le départ de 400 ouvriers dockers avant le 1er juillet 1988, soit un peu plus de 25 % de l'effectif antérieur de 1 515 personnes.

Les discussions sur les modalités d'un plan social ont été menées de front avec celles sur l'amélioration de la productivité de la main-d'œuvre. Au total, 33 accords ont été conclus, qui apportent à la convention collective rouennaise une refonte importante. Ces accords concernent l'assouplissement dans l'utilisation des équipes, dans les modalités de rémunération ou de repos compensateurs, ou dans les compositions d'équipes elles-mêmes.

Le gain de productivité sur le facteur main-d'oeuvre apporté par ces accords s'établit, par rapport au 1er janvier 1986, dans une fourchette de 20 à 25 %. Ces gains résultent en effet des accords relatifs à la main-d'oeuvre et de la mise en œuvre des techniques de rationalisation (généralisation des systèmes d'unités de charge: unités présanglées ou précerclées, palettes, flats, bolsters . . .).

D'ores et déjà, des résultats spectaculaires ont été enregistrés sur des trafics qui cumulent les effets de diverses mesures prises. Ainsi, dans le cas de la manutention des sacs de farine au terminal de Petit-Couronne, le coût de la manutention est passé de 120 francs la tonne, il y a un an, à 50 francs aujourd'hui.

Europe 1992 : défi relevé

La caractéristique la plus originale du port de Rouen par rapport à ses concurrents, c'est le fait qu'il est le seul grand port dont les exportations sont supérieures aux importations. Pratiquement 60 % du trafic rouennais s'effectue à l'export.

Le fleuron de ces exportations, c'est le secteur agro-alimentaire. On sait que Rouen est le premier port européen pour les exportations de céréales: entre 7 et 9 millions de tonnes selon les récoltes et l'évolution du marché mondial. Le port de Rouen assure également, à lui seul, les deux tiers des exportations maritimes françaises de blé et d'orge. Rouen est aussi l'un des principaux ports mondiaux d'exportation de farines et de sucres. C'est dire de quel poids il pèse dans le commerce extérieur de la France. Lorsque l'excédent agricole atteint, comme ce fut le cas en 1987, 32 milliards de francs, on peut dire que le port de Rouen y a contribué pour un tiers.

Rouen est le premier port d'exportation de céréales. Situé au cœur de la plus importante région européenne de production de blé, le port de Rouen a été choisi comme port de référence par la Communauté Économique Européenne.

Au niveau européen également, Rouen est le premier port d'exportation de céréales. Situé au coeur de la plus importante région européenne de production de blé, le port de Rouen a été choisi comme port de référence par la Communauté Économique Européenne. La cotation FOB Rouen, retenue également par le Conseil International du Blé (I.W.C.) confirme la place de Rouen dans le domaine céréalier.

L'objectif du port de Rouen est de devenir le grand port de l'agro-alimentaire dans l'Europe de 1992. Cela représente de maintenir les parts de marché actuelles et de participer au développement du trafic intra-communautaire (vers l'Italie et la Péninsule Ibérique) qui provoquera une hausse des exportations de céréales.


PORT DE ROUEN

Pour réaliser cette ambition, le port de Rouen compte s'appuyer sur sa réussite dans le secteur des céréales pour en faire un modèle à transposer aux autres trafics, et prioritairement aux trafics agro-alimentaires.

À l'instar de ce qui a été réalisé pour les céréales:

- concentration des moyens
- organisation performante
- très forte compétitivité
- accès nautiques adaptés
- outillage performant
- dimension européenne des opérateurs
- structure d'investissement privé/public dynamique

les actions du port visent à mettre en oeuvre les mêmes moyens pour l'ensemble des trafics agro-alimentaires.

En outre, le port de Rouen se prépare à l'accueil d'industries agro-alimentaires nouvelles grâce à la création d'un terminal agro-alimentaire à Grand-Couronne. Ce terminal permettra le traitement des marchandises destinées aux industries agro-alimentaires en développement (trituration de graines riches en protéine, éthanol, aliments pour animaux) ou produites par elles.

De la même manière, le port de Rouen poursuit une action de maintien à leur haut niveau actuel des lignes régulières qui font la réputation de Rouen et conduit des efforts avec l'ensemble de la communauté portuaire pour diversifier les liaisons sur les marchés que les analyses prospectives ont désigné comme prioritaires.

L'ensemble de ces actions s'inscrit, bien sûr, dans la perspective du marché unique européen. Pour Rouen, cela signifie une opportunité plus grande d'entreprendre et la perspective d'une nouvelle prospérité que l'élargissement du marché va susciter.

Il a constamment été dans la nature du port de Rouen d'être l'instrument de l'essor de son hinterland. De la même manière, sa prospérité a toujours été parallèle à celle de l'industrie et de l'agriculture dont il a accompagné le développement. Pour le port de Rouen, l'Europe du marché unique est une chance d'essor renouvelé. ⚓

**Jean Werbowy fait partie du Service de relations extérieures et Communications du Port de Rouen.*

ROUEN DANS LA RANGÉE NORD-CONTINENT

Ports	Navires	Sorties*	Entrées*	EVP	Produits raffinés*	Céréales*
Rouen	3 699	12,9	8,9	922 185	6,3	7,6
Le Havre	6 782	9,0	38,1	4 483 339	5,1	0,9
Dunkirk	6 611	7,7	24,6	762 553	4,3	0,7
Zeebrugge	10 085	7,1	7,9	2 270 020	0,9	0,2
Gand	4 469	5,1	18,9	47 000	1,5	3,3
Antwerp	16 446	36,5	53,6	11 090 689	16,6	3,1
Amsterdam	4 236	7,2	21,2	592 530	12,5	0,4
Rotterdam	30 105	51,8	197,1	24 498 702	31,6	2,4

* en millions de tonnes

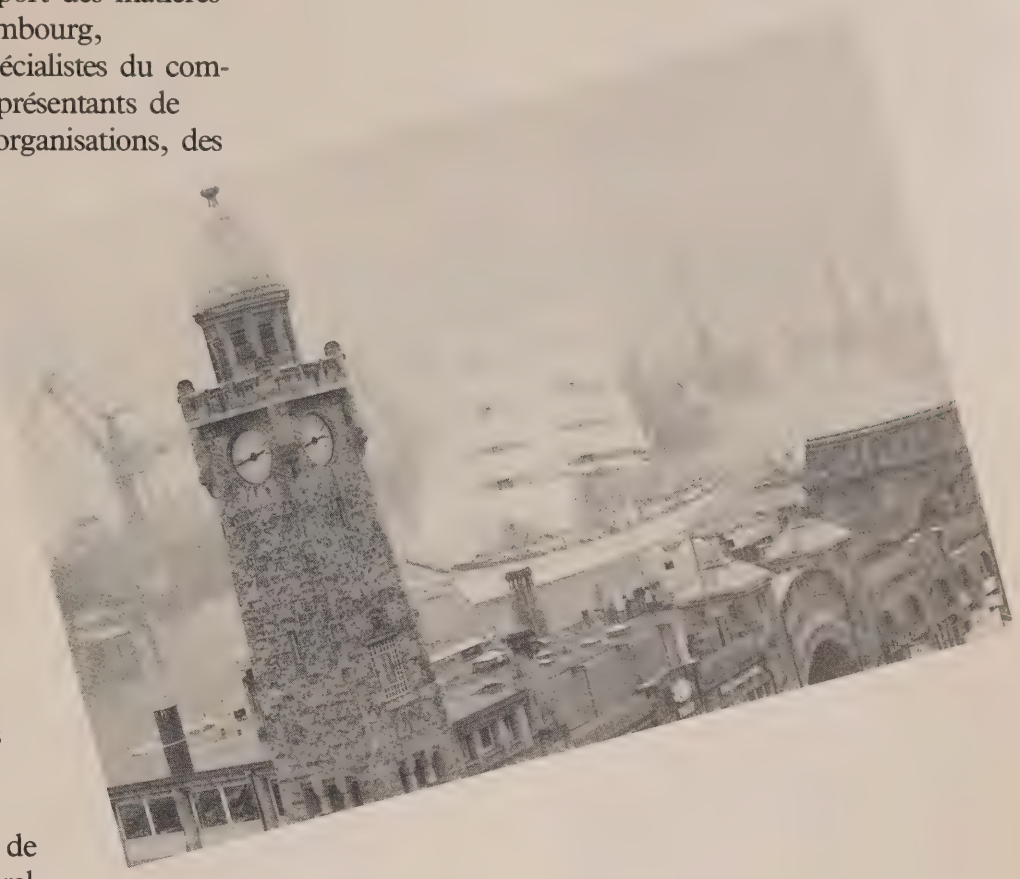
Source: Trafic des ports du monde — J.M.M. nº 3550

Ce tableau reprend les ports dont le télélloyd suit quotidiennement la position des navires à l'entrée et à la sortie. Rouen y apparaît comme premier port pour les céréales, 3e pour les sorties et il est, par ailleurs, 3e français pour les conteneurs.

TDG 10

Le 10e Colloque sur le transport des matières dangereuses réunira à Hambourg, en septembre prochain, des spécialistes du commerce et de l'industrie, des représentants de gouvernements et de diverses organisations, des scientifiques et des chercheurs pour discuter de l'état et des tendances dans le domaine du transport des matières dangereuses sur les voies navigables.

Sous l'égide du ministère fédéral des Transports de la RFA, l'*Institut fédéral de recherche et d'essai sur les matières* a pris en charge l'organisation de ce colloque international, qui se déroulera au Centre des congrès de Hambourg du 25 au 27 septembre prochain.



Le programme très complet de la conférence et l'exposition parallèle permettront d'aborder diverses questions concernant le transport des biens emballés, le transport par navire désigné, les ports et les voies navigables intérieures, la protection de l'environnement, les législations internationale et nationales ainsi que l'éducation et la formation.

À noter également la 6e Conférence mondiale de l'IAPRI sur l'emballage, qui débutera le 27 septembre, soit le dernier jour du Colloque, et se poursuivra jusqu'au 29 septembre, au Centre des congrès de Hambourg. L'un des principaux thèmes de cette conférence sera justement l'emballage des matières dangereuses.

10e Colloque international sur le transport des matières dangereuses sur les voies navigables maritimes et intérieures

Hambourg
du 25 au 27 septembre 1989

Man between Land and Sea

A closer look at the Elements: Earth, Water, Air and Space; and at their different suitabilities for transportation

*by F. K. de Vos**

Last in a two-part article

When we think of transportation, we immediately think in terms of the road or the medium through which this transport is to pass. As a matter of fact, we classify the movement of goods and passengers by this medium or "mode" rather than by the particular vehicle used, and talk about air transport, water transport and road or rail transport. In other words, we generally specify the medium through which the movement is to take place rather than the particular vehicle to be used; which could be anything from a helicopter to a jet, a missile to a man-made satellite (in the air and in space); a fast container or Ro-Ro liner or a bulk-carrying tramp vessel (on water); a dayliner or a rumbling 100-car unit train (on rail), and a sports car or a trailer truck (on road).

If, therefore, the *way* seems to be the characteristic factor in determining transportation, it is only natural that we take a closer look at these basic "modes" by which man is able to ship goods or passengers.

On our planet Earth, mankind has since time immemorial recognized the following three primary elements in nature: *earth* so typical of our human habitat that we also use its name for our planet as a whole; *water* and *air. Space* has lately become a fourth possible medium for transportation and we shall discuss its implications later in this article.

Any transport we wish to effect on this planet must obviously make use of one of these three media or "ways". Let us then consider some of the basic characteristics of these three elements and see how their respective differences logically and practically affect transportation.

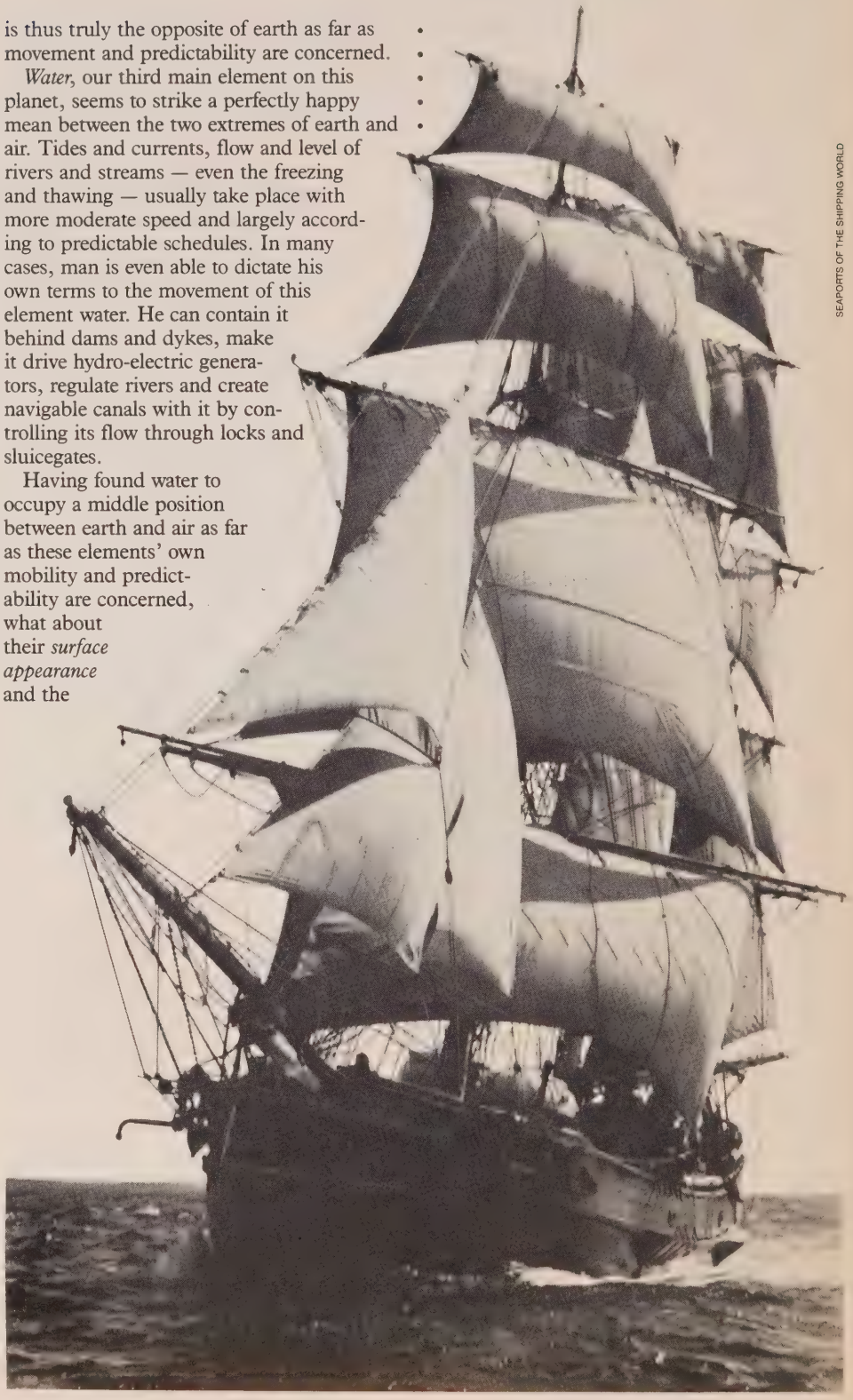
First of all, how do they compare as to *movement* and *predictability*?

The *earth* on which we stand or walk is, of course, essentially static and, as long as one does not venture about in darkness or in a heavy fog, quite predictable. The occasional earthquakes and quicksand or quagmire areas do very little to contradict earth's established reputation for extreme predictability and immobility.

Air, on the other hand, obviously occupies the other extreme position regarding mobility and predictability. Air is almost never quiet as a complete absence of any wind or breeze is quite unusual, except perhaps in the doldrums. And the predictability of this movement too is extremely poor, except again in certain regions where regular tradewinds blow at certain times of the year. Air is thus truly the opposite of earth as far as movement and predictability are concerned.

Water, our third main element on this planet, seems to strike a perfectly happy mean between the two extremes of earth and air. Tides and currents, flow and level of rivers and streams — even the freezing and thawing — usually take place with more moderate speed and largely according to predictable schedules. In many cases, man is even able to dictate his own terms to the movement of this element water. He can contain it behind dams and dykes, make it drive hydro-electric generators, regulate rivers and create navigable canals with it by controlling its flow through locks and sluicegates.

Having found water to occupy a middle position between earth and air as far as these elements' own mobility and predictability are concerned, what about their *surface appearance* and the



SEAPORTS OF THE SHIPPING WORLD

support they give or the *hindrance* these elements put up against transportation?

Here again earth and air occupy extreme positions. *Earth* is solid and, except when soaked until changed into mud or silt, completely supports any object laid on it. Ideal for the erection of buildings, our earth and especially bedrock constitute a very poor "road". This explains why so much capital has to be spent on grading and building of roads, railroads, streets and sidewalks. To sum it up, earth supports very well but its natural surface forms endless obstacles and pitfalls, thus greatly hindering transportation in most areas of the globe.

Air once again occupies the other extreme position. This element has no usable surface at all. It also offers very scant support to anything heavier than itself and for that reason great energy is required just to keep an aircraft aloft. Contrary to earth, air opposes very little resistance to vehicles which explains the feasibility of relatively much higher speeds, though always at relatively great expense.

Empty-space has by definition neither density, nor surface, nor movement; but it is most predictable and affords stability to missiles in direct ratio to their thrust. As a result, space transportation occupies a position even more extreme than air transportation did in comparison to land and water transport. Once launched beyond the gravity of this planet, a space missile may well be capable of following a closely predictable, uninterrupted course to a distant target with relatively low fuel requirements. But, unfortunately, the initial expense of getting the missile off its pad into space, the relatively long time required for the voyage and the high cost of launching the vessel back into space from the target planet, all add up to a formidable series of constraints which would appear to make this particular kind of transportation fantastically uneconomical.

As a matter of fact, the only possible justification for space transportation would seem to be the discovery on some distant planet — or in space itself — of an extremely valuable commodity which could offset the truly "astronomical" freight bills.

As to our third element, *water*, it once again occupies the ideal intermediate position regarding surface, support and resistance to transportation.

On most bodies of water the *surface* is, by definition, perfectly level which makes for a minimum of interference with movement. Even where rapids or falls interrupt this perfect "road", technology can often correct nature's imperfection and bypass the hindrances with canals. Thus, temporary storms are the only surface constraint.

The *density* of water too represents an ideal compromise between all-absorbing air, which gives almost no support, and all-repelling earth which gives too much. A certain number of fundamental resources on our planet, like wood, are lighter than water and can be floated along rivers and seas while those heavier than water as well as those requiring dry transport can be kept afloat on its surface. By the simple expedient of obeying the Law of Archimedes — a body floats in water provided it weighs less that the water it displaces — all kinds of craft and ships have been developed by an increasingly-sophisticated technology. Thus shipping, and the ports it serves, have become and will continue to be the most efficient means of transportation conceivable. As a result, despite our great 20th-Century technical breakthroughs in the fields of air, space, pipeline, underwater, rail and highway transport, the average cost of moving the world's commodities by lake, river or ocean freighter is still between 12 to 150 times lower than by any other mode. And the unpredictably higher cost of fuel tends to further increase this advantage.

Incidentally, this significantly-greater cost-effectiveness of marine transportation is clearly reflected in the much lower average specific values of the particular cargoes, both in bulk and unitized/containerized, that can be, and are, shipped around the world economically by water. Thus, recent foreign trade statistics for the Netherlands have shown the following average values, in Canadian dollars per kilogram of imports and exports, by mode:

• Air	68.36	Maritime	.63
• Road	1.75	Canals	.28
• Rail	1.03		

Nor is this predominant position of waterborne transportation in the movement of lower-valued but essential bulk commodities a recent development. Far from it since the superiority of shipping was even more pronounced in the centuries preceding the invention of improved (motor) vehicles and railways using flanged steel wheels.

This outstanding efficiency helps to understand how and why seapower — the control of marine transportation — is, and always has been, the mainspring of truly independent, self-sufficient and flourishing civilizations. It also explains why such a conspicuously large proportion of prosperous societies have been, or still are, centered on ports, coastal regions and navigable river basins.

Even a hastily-compiled list of some of these ancient as well as modern centers is impressive enough: Babylon, Tyre, Sidon, Cnossos, Halicarnassus, Beirut, Miletus, Ephesus, Rhodos, Basrah, Byzantium (Constantinople, Istanbul), Athens, Corinth, Naucratis, Sais, Alexandria, Cairo, Carthage, Baghdad, the two Cartagenas, Tarentum, Syracuse, Rome/Ostia, Naples, Genoa, Aquileia (Venice), Revenna, Pisa and Florence, Massilia (Marseille), Trieste, Split, Barcino or today's Barcelona, Gades (Cadiz) and Icosium (Algiers), Tunis, Lisbon, Brugges — which prospered until its harbor silted up — Antwerp, Bordeaux, London, Briltol, Edinburg, Amsterdam, Copenhagen, Stockholm, Oslo, Danzig and the many Hanse cities lining the shores of the Baltic and North Seas, Nowgorod (until sacked by Ivan the Terrible), St. Petersburg (Leningrad) founded by Peter the Great, Riga, Tallinn, Helsinki, Montréal, Boston, New York, Québec, Halifax and Saint John, St. John's, Chicago, Toronto, Savannah, Detroit, New Orleans, Havana, Rio de Janeiro, Vancouver, San Francisco, Buenos Aires, Seattle, Lima, Los Angeles and scores of others around the Atlantic in the Americas and in Africa.

In Asia, we find Hong Kong, Singapore, Tokyo, Seoul, Bombay, Karachi, Colombo, Bangkok, Rangoon and Djakarta (the latter farsightedly selected as a port site by Dutch traders as Batavia), Calcutta, Shanghai, Tianjin (Beijin), Wuhan and Canton. In Africa and Oceania, stand out notable "newcomers" like Sydney, Brisbane, Melbourne, Manila, Mombasa, Adelaide, Cape Town, Accra, Durban, Zanzibar, Dares-Salaam and several other centers.

At this point, the question seems justified whether the alleged civilizing influence of marine transport-conducive geography has or has not been borne out by the particular locations of history's earliest truly mature societies, i.e. the Chinese and the Mediterranean-European? Interestingly enough, the reader simply has to glance at the world's continents on a globe or atlas and he/she will quickly realize that by far the most indented coastal configurations — which entail the most marine transportation accessible land masses — are to be found precisely in Europe, followed at some distance by southeast Asia including Korea, Japan and Taiwan. Conversely, also, modern human development in the least indented continents namely Australia and Africa has, in complete accordance with the author's thesis, lagged many centuries behind that of all other continents.

The Eight Conditions of Seapower

One might be somewhat surprised to find there are very few books on the subject of seapower, its main advantages and its essential requirements.

The sailor and the merchant may be rather vocal and imaginative when it comes to "telling tall tales"; but they are surprisingly discreet if not downright secretive when it comes to giving out detailed information about their actual ways and means to navigational or financial success. In a similar vein, incidentally, populations depending on the fisheries for their subsistence have tended to develop poorly articulated and, therefore, less intelligible languages than have those engaged in agriculture. Perhaps in more ways than one, all those going down to the sea in ships or deriving their incomes from shipping activities are members of a rather "silent service".

Nor is it all that surprising if relatively few British authors have sought to analyze this subject even though their nation's whole existence has always been closely tied to its maritime position. To a Briton, the importance of sea transport and seapower goes, quite literally, without saying.

Among American historians, Captain A. T. Mahan appears to be about the only one to have drawn attention to seapower as a factor in civilization. But his study was that of a pioneer and remained rather sketchy. Today, the world at large and the United States in particular are so vastly different from what they were in the nineteenth century that Mahan's visionary words and teachings have lost much of their guiding power.

The *Eight-Conditions* for a flourishing maritime civilization can be easily remembered by the eight letters of the word *Seapower:* **S**hips both merchantmen and men-of-war — Enough **E**arth to provide these ships with a sound economic and military land base, and since 1939, with adequate airpower — **A**ble seamen to man the navy and the merchant marine — **P**orts good and numerous enough to accommodate these fleets — **O**verseas bases sufficient to make the seven seas safe for shipping and commerce — a **W**illingness to maintain a measure of freedom in the fields of business, politics, science, religion, education — An **E**nterprising spirit particularly in the fields of business, social and political reform, scientific research — and, finally, a **R**ecognition of the vital importance of seapower and **R**esolution to maintain it as the prime foundation of the civilization existence, safety and prosperity.

Few nations or civilizations have possessed all eight of these elements of seapower; but history shows that those that did ruled supreme. And their decline usually came through the loss of one or several of these vital requirements of seapower. Nor has the advent of the airplane and the space rocket changed this to any significant extent.

For instance, the world leadership assumed today by the North Atlantic Treaty Organization, whose backbone is American and European seapower, rests on these very same eight conditions. And with every impairment of one of them — such as the increasing inadequacy of continental Europe and the British Isles as a land base — the center of gravity of the whole alliance tends to shift across the Atlantic to the United States and Japan.

Towards the end of the 20th Century, this great power still leads the world as Rome led its Mediterranean world, once rival Carthage had been disposed of. Today, the United States have the ships, the solid continental land base with air and space defence, the seamen, the ports, the overseas bases, the willingness to uphold freedom in all fields, the enterprising spirit and — hopefully — the recognition of the importance of seapower to survival of the West, as well as resolution to maintain it.

As a matter of fact, only two of these requirements seem to be at all subject to possible threat. The similarity in America's peninsular geography with that of Italy might lead to the same disaster that finished Rome: invasions of the land base from the North.

The other threat, and perhaps the most deadly at this stage, stems from possible loss of the last requirement for seapower: awareness by North Americans of the vital importance of seapower and their resolution to maintain it by all means.

More unlikely in the case of a relatively small island power like Britain, the risk of loss of such national awareness is very real in the case of huge continental powers like Canada and the United States where a large proportion of the population dwells at relatively great distances from tidewater. In this respect, the Mississippi river and St. Lawrence Seaway ought to exert a positive influence since they carry a salty breeze right up to the Great Lakes and Plains where continental isolationism has held sway for so long.

AMERICAN SHIPPER

That this awareness of the importance of seapower is essential may be briefly shown by two examples from British history.

Between 1689 and 1697, King William III (of Orange) conducted the war against France's Louis XIV the way he had learned in his native Holland, on land, and England never obtained fewer results for the efforts she made. In the second instance, taken from the American War of Independence, it was the German King George III's preoccupation with a large land army while naval shipbuilding and recruiting were neglected that played a considerable part in the ultimate defeat of the British motherland.

Through the many centuries leading up to our present-day Atlantic civilization, seapower runs like a continuous thread starting with the ancient Babylonian and Egyptian civilizations and proceeding steadily westward through the Mediterranean and along the North Atlantic coasts of Europe finally to cross the Ocean in this century.

If it be true that the light of civilization comes from the east — Ex Oriente Lux — it is equally true that this light pursues its course westward. Carried in seaworthy bottoms, the present Atlantic or Western civilization has grown out of the Mediterranean. ⚓

**Dr. F. K. de Vos, a retired Ports Canada employee, is an Ottawa-based consultant.*

"EDI AND INTERNATIONAL TRADE"

FIRST INTERNATIONAL CONGRESS OF EDI USERS

VANCOUVER CONVENTION CENTRE
VANCOUVER, CANADA
AUGUST 9 TO 11, 1989

INTERNATIONAL CONGRESS

Vancouver, Canada's beautiful West Coast city, has been chosen as the picturesque setting for the historic first International Congress of EDI Users scheduled to take place from August 9 to 11, 1989.

The two and a half day Congress is being hosted by the EDI Council of Canada, and will be held at the spacious Vancouver Convention Centre in the heart of downtown Vancouver.

The need for the Congress was recognized and is endorsed by the North American EDI User Group (ANSI). It is being jointly sponsored by the TDCC/EDIA (U.S.A.) and the EDI Council of Canada.

More than 1,000 delegates from around the world are expected to register for this momentous event which is the first ever gathering of EDI users of this magnitude.

The Congress will feature seminars, international speakers, workshops and EDI vendor exhibits, demonstrating the latest advancements in EDI technology, standards, third-party mailboxes and communications.

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KEYNOTE SPEAKERS

As hosts for this prestigious event, the EDI Council of Canada will continue its tradition of presenting well-known, executive speakers who are involved in implementation of EDI in their companies, associations or government departments.

For the Congress, delegates will be addressed by outstanding speakers from North America, Europe and the Far East. Keynote speakers will cover a range of industries and topics, including Automotive, Chemical, Shipping, Customs, Banking, Food and Drug, Ports and Government, including the latest developments of EDI and International.

SEMINARS

There will be two key seminars at the Congress. The first will deal with the important issues of Legal and Audit implications of EDI, both in terms of individual countries and internationally.

The second seminar will be entitled, "How to integrate EDI into your Business", the key question to be answered for many of the business executives expected to attend the Congress.

GENERAL MEETING

The General Meeting of the Congress will be held to properly constitute the Congress, define objectives, elect officials, write bylaws and a constitution, as well as choose sites for future meetings of The International Congress of EDI Users.

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A full Congress agenda will be available from the EDI Council by March 30, and all registered delegates for the Congress will receive a printed agenda from the EDI Council on receipt and confirmation of their registrations.

L'homme entre terre et mer :

au cœur du progrès humain et de la civilisation.

*par F. K. de Vos**

La terre, l'eau, l'air et l'espace : de quelle façon ces éléments favorisent-ils les moyens de transport?

Dernier de deux articles

LE SAINT-LAURENT — MIA ET KLAUS

Le mot transport fait immédiatement surgir à notre esprit l'image du chemin ou encore de la voie qui est utilisée pour se déplacer. A vrai dire, nous classons le déplacement des marchandises et des passagers en tenant compte de cette voie ou du « mode » et non du véhicule utilisé : nous parlons ainsi de transport aérien, maritime, routier ou de transport par chemin de fer. En d'autres termes, nous spécifions généralement la voie servant au déplacement et non son véhicule, lequel peut présenter une variété de visages: dans l'air et dans l'espace, ce véhicule peut aussi bien être un hélicoptère qu'un avion à réaction, un missile qu'un satellite artificiel; sur l'eau, il peut être un porte-conteneurs rapide, un paquebot roulier ou un tramp pour le transport en vrac; sur un chemin de fer, il peut être un train de passagers ou un train de 100 wagons qui passe avec fracas; et enfin sur la route, il peut aller de la voiture de sport au camion à remorque.

Ainsi, puisqu'il semble que les moyens de transport soient définis en tenant compte de la *manière* dont sont effectués les déplacements, il n'est que naturel d'examiner attentivement ces « modes » fondamentaux qui permettent à l'homme de transporter des marchandises et des passagers.

Depuis toujours, l'homme a reconnu trois principaux éléments dans la nature : *la terre* – tellement caractéristique de notre environnement humain que nous avons aussi choisi ce nom pour notre planète – *l'eau* et *l'air*. *L'espace* est récemment devenu une quatrième voie pour le transport et nous en discuterons un peu plus loin.

Peu importe le moyen de transport auquel nous ayons recours sur cette planète, il est nécessaire d'utiliser l'une de ces trois voies. Examinons donc quelques-uns de leurs traits fondamentaux et voyons de quelle manière leurs différences respectives peuvent avoir un effet sur le transport, tant sur le plan logique que pratique.

En premier lieu, comment ces éléments se comparent-ils en ce qui a trait au *mouvement* et à la *prévisibilité*?

Nous nous tenons debout et nous marchons sur *la terre* qui, évidemment, est essentiellement immobile et aussi assez prévisible, à moins bien sûr, que l'on ne s'aventure dans la noirceur ou dans une brume épaisse. Et les rares tremblements de terre et régions de sables mouvants ou de bourbiers ne ternissent pas vraiment une réputation bien établie de très grande prévisibilité et d'immobilité.

De son côté, *l'air* occupe une position évidemment opposée pour ce qui est de la mobilité et de la prévisibilité. D'une part, l'air n'est presque jamais calme, une absence totale de vent ou de brise étant plutôt inhabituelle, sauf peut-être dans la zone de calme équatorial. D'autre part, les mouvements du vent sont difficiles à prévoir, si ce n'est dans certaines régions où des alizés soufflent avec régularité à certaines époques de l'année. Ainsi, l'air se situe vraiment à l'opposé de la terre en ce qui touche le mouvement et la prévisibilité.

L'eau, troisième élément fondamental de cette planète, semble occuper une position idéale entre les deux extrêmes que sont la terre et l'air. Les marées et les courants, le cours et le niveau des fleuves et des ruisseaux – et même le gel et le dégel – se produisent habituellement à des vitesses plus modérées et en grande partie à des moments prévisibles. L'homme est même souvent capable de maîtriser le déplacement de l'eau. Il peut ainsi contenir celle-ci derrière des barrages et des digues et lui faire actionner des génératrices hydro-électriques. Il peut aussi régler le niveau des rivières et bâtir des canaux navigables en dirigeant le cours de l'eau à travers des écluses et des vannes.

Pour ce qui est de la mobilité et de la prévisibilité, nous avons donc trouvé que l'eau occupe une position intermédiaire entre la terre et l'air. Il faut maintenant s'intéresser à l'*apparence que présente la surface* de ces éléments et également au *support* ou à la *résistance* qu'ils offrent aux moyens de transport.

Ici encore, la terre et l'air sont situés aux antipodes. *La terre* est solide et peut supporter n'importe quel objet, sauf si elle est détrempée et se transforme en boue ou en vase. Idéale pour la construction d'édifices, la terre, et tout spécialement les soubassements, font de très mauvaises « routes ».

Voilà pourquoi tellement de capitaux doivent être investis pour la construction et la réfection de routes, de chemins de fer, de rues et de trottoirs. En résumé, la terre est un excellent support mais sa surface naturelle présente une suite d'obstacles et d'embûches qui, en fin de compte, entravent le transport dans la plupart des régions du globe.

De son côté, l'*air ne* possède aucune surface utilisable. Par ailleurs, il n'offre qu'un support minime aux objets d'un poids supérieur au sien, ce qui explique pourquoi tant d'énergie est nécessaire rien que pour maintenir un avion dans les airs. Contrairement à la terre, l'air offre très peu de résistance aux véhicules, d'où la possibilité d'atteindre des vitesses relativement beaucoup plus rapides, même si c'est à un coût relativement plus élevé.

Par définition, le *vide de l'espace ne* possède ni densité, ni surface, ni mouvement. Par contre, il est l'élément le plus prévisible et il procure aux missiles une stabilité proportionnelle à leur poussée. Comparativement aux moyens de transport terrestre et maritime, le transport spatial occupe donc une position encore plus extrême que celle du transport aérien. Dès qu'il se retrouve à l'extérieur de l'attraction terrestre, un missile spatial peut très bien suivre une trajectoire facilement prévisible et sans interruptions jusqu'à une lointaine destination, et ce, avec relativement très peu de carburant. Malheureusement, une longue suite de contraintes rendent ce moyen de transport fort peu économique: qu'on songe ainsi à ce qu'il en coûte pour qu'un missile quitte sa rampe de lancement, à la durée du voyage et à ce qu'il en coûte pour lancer à nouveau l'engin dans l'espace à partir de sa planète-cible.

En fait, seule la découverte d'un produit d'une très grande valeur sur une lointaine planète – ou encore dans l'espace – pourrait justifier les coûts « astronomiques » de ces voyages.

Notre troisième élément, *l'eau*, occupe encore une fois une position intermédiaire qui est idéale en ce qui concerne la surface, le support et la résistance au transport.

La plupart des grandes masses d'eau ont, par définition, une *surface* qui est parfaitement horizontale, ce qui n'apporte pour ainsi dire que très peu de résistance aux déplacements. Même aux endroits où des rapides et des chutes interrompent ce « chemin » parfait, la technologie peut souvent corriger ces imperfections de la nature et ainsi permettre de contourner les obstacles par des canaux. Ainsi, les tempêtes passagères sont les seules contraintes que l'on peut retrouver à la surface de cet élément.

La *densité* de l'eau représente également un compromis idéal entre l'air qui absorbe tout mais ne fournit presqu'aucun support, et la terre qui, au contraire, rejette tout mais constitue un excellent support. Un certain nombre de ressources essentielles de notre planète, comme par exemple le bois, sont plus légères que l'eau et peuvent ainsi flotter sur les rivières et les océans alors que celles qui sont plus lourdes que l'eau et celles qui doivent demeurer au sec peuvent être transportées sur sa surface. La loi d'Archimède, selon laquelle un corps flotte à condition que son poids soit inférieur à l'eau déplacée, a permis que toute une gamme de modèles de petits bateaux et de navires soient créés à l'aide de techniques de plus en plus perfectionnées. Ainsi la navigation est devenue, et elle va demeurer, le moyen de transport le plus efficace qu'il soit possible d'imaginer. En conséquence, malgré les grandes découvertes techniques effectuées au 20e siècle dans divers secteurs du transport (aérien, spatial, sous-marin, par pipeline, par chemin de fer et par route), le coût moyen du déplacement des marchandises par affréteurs parcourant les lacs, les fleuves ou les océans

La maîtrise du transport maritime — a toujours été, et est encore la principale cause de l'autonomie, de l'indépendance et de la prospérité des civilisations.

demeure encore de 12 à 150 fois inférieur à tout autre moyen. Et la hausse toujours imprévisible du prix des carburants tend à accentuer encore plus cet avantage.

D'ailleurs, cette rentabilité beaucoup plus importante du transport maritime s'exprime clairement dans la valeur moyenne généralement moindre des différentes cargaisons, tant en vrac que par unité/conteneur, qui peuvent être et qui sont transportées de façon économique autour du monde. Ainsi, par exemple, des statistiques récentes portant sur le commerce extérieur des Pays-Bas font état des chiffres suivants (en dollars canadiens par kilogramme d'importations et d'exportations suivant le mode de transport)

• air	68,36	• voie maritime	0,63
• route	1,75	• canaux	0,28
• chemin de fer	1,03		

Et la prédominance du transport maritime pour le déplacement des marchandises en vrac de valeur moindre mais essentielles, n'est pas nouvelle. Loin de là, puisque la supériorité de la navigation était encore plus grande avant que soient inventés et améliorés les véhicules à moteur et les rails utilisant les roues d'acier à rebord.

Cette efficacité exceptionnelle permet de comprendre comment et pourquoi la puissance navale – soit la maîtrise du transport maritime – a toujours été, et est encore la principale cause de l'autonomie, de l'indépendance et de la prospérité des civilisations. Cette efficacité explique également pourquoi un pourcentage aussi manifestement élevé de sociétés prospères ont été par le passé, et sont encore aujourd'hui, situées dans les régions portuaires et côtières ainsi que le long des bassins de rivières et de fleuves navigables.

Et même une liste hâtivement dressée de certains de ces centres anciens et modernes est fort impressionnante: Rails, Tyr, Sidon, Cnossos, Halicarnasse, Beyrouth, Milet, Ephèse, Rhodes, Basrah, Byzance (Constantinople, Istanbul), Athènes, Corinthe, Naucratis, Saïs, Alexandrie, Le Caire, Carthage, Bagdad, Cartagena et Carthagène, Tarente, Syracuse, Rome/Ostie, Naples, Gênes, Aquilée (Venise), Ravenne, Pise et Florence, Massalia (Marseille), Trieste, Split, Barcino (aujourd'hui Barcelone), Gades (Cadix) et Icosium (Alger), Tunis, Lisbonne, Bruges – qui a connu la prospérité jusqu'à l'ensablement de son port – Anvers, Bordeaux, Londres, Bristol, Edimbourg, Amsterdam, Copenhague, Stockholm, Oslo, Dantzig et les nombreuses villes de la Hanse s'échelonnant le long des rives de la Baltique et de la mer du Nord, Novgorod (jusqu'à son pillage par Ivan le Terrible), Saint-Petersbourg (Léningrad) fondée par Pierre le Grand, Riga, Tallin, Helsinki, Montréal, Boston, New York, Québec, Halifax et Saint John, St. John's, Chicago, Toronto, Savannah, Detroit, La Nouvelle-Orléans, La Havane, Rio de Janeiro, Vancouver, San Francisco, Buenos Aires, Seattle, Lima, Los Angeles et un grand nombre d'autres villes situées sur les côtes américaines et africaines de l'Atlantique.

En Asie, on retrouve Hong Kong, Singapour, Tokyo, Seoul, Bombay, Karachi, Colombo, Bangkok, Rangoon et Djakarta (anciennement Batavia, cette dernière fut choisie avec clairvoyance comme site portuaire par des commerçants hollandais), Calcutta, Shanghai, Tianjin (Beijin), Wu-han et Canton. En Afrique et en Océanie, se distinguent de remarquables nouveaux venus tels que Sydney, Brisbane, Melbourne, Manille, Mombasa, Adelaïde, Cape Town, Accra, Durban, Zanzibar, Dar Es'Salaam et plusieurs autres.

À ce moment, il serait justifié de se demander si la présumée influence civilisatrice de la géographie favorable au transport maritime s'est confirmée ou non dans les choix des emplacements des premières sociétés vraiment développées de l'histoire, soit les sociétés chinoises et européennes de la Méditerranée. Le lecteur ou la lectrice n'a qu'à jeter un bref coup d'oeil aux continents sur un globe terrestre ou sur un atlas pour s'apercevoir très vite que les configurations littorales les plus échancrées – soit celles qui sont les plus favorables au transport maritime – se retrouvent d'abord en Europe, puis en Asie du Sud-Est, incluant la Corée, le Japon et Taiwan. Par contre, les continents dont le littoral est moins échancré, notamment l'Australie et l'Afrique, se sont développés avec plusieurs siècles de retard, tel que proposé par la thèse de l'auteur.

Les huit conditions essentielles à la puissance navale

Il est étonnant que très peu de livres aient été écrits au sujet de la puissance navale, sur ses avantages et ses principales exigences.

Très bavards et imaginatifs pour raconter des histoires abracadabrantes, les marins et commerçants demeurent toutefois d'une discrétion surprenante, pour ne pas dire franchement secrets au moment d'expliquer leurs succès navals ou financiers. Dans un même ordre d'idées, les populations qui dépendent de la pêche pour leur subsistance ont eu tendance à créer des langages mal articulés et ainsi moins intelligibles que ceux s'occupant d'agriculture. Peut-être que de plus d'une façon, tous ceux qui s'aventurent sur la mer ou qui vivent de la navigation font partie d'une « ligue silencieuse ».

Il n'est pas du tout surprenant que très peu d'auteurs britanniques aient étudié ce sujet malgré le fait que l'existence de toute leur nation ait toujours été étroitement liée à sa position maritime. Pour un Britannique, l'importance du transport maritime et de la puissance navale va de soi.

Le capitaine A. T. Mahan semble être le seul historien américain à s'être préoccupé du rôle civilisateur de la puissance navale. Mais son étude est celle d'un pionnier et demeure assez incomplète. Le monde, et plus précisément les États-Unis, sont de nos jours tellement différents de ce qu'ils étaient au 19e siècle, que l'oeuvre visionnaire de Mahan a perdu beaucoup de son influence.

Il existe huit *conditions essentielles* à la prospérité d'une civilisation maritime : posséder des navires de commerce et des navires de guerre; sur terre, pouvoir fournir à ces bateaux une solide base économique et militaire, et depuis 1939, une puissance aérienne adéquate; avoir des équipages compétents, tant pour la marine que pour la marine marchande; avoir suffisamment de ports satisfaisants pour recevoir ces flottes; avoir assez de bases à l'étranger pour pouvoir protéger la navigation et le commerce sur les sept mers; vouloir garder une certaine indépendance dans les domaines des affaires, de la politique, des sciences, de la religion et de l'éducation; être entreprenant, tout spécialement dans le secteur des affaires, des réformes socio-politiques et de la recherche scientifique; et enfin, reconnaître l'importance fondamentale de la puissance navale et vouloir la conserver en tant qu'assise principale de l'existence, de la sécurité et de la prospérité de la civilisation.

L'histoire a démontré que le petit nombre de nations ou de civilisations qui ont répondu à ces huit critères se sont manifestées avec éclat. Leur déclin fut habituellement causé par la perte de l'une ou de plusieurs de ces conditions fondamentales. Et l'arrivée de l'avion et de la fusée n'a en rien modifié cette situation.

Ainsi, par exemple, la direction mondiale exercée aujourd'hui par l'OTAN, dont le pivot est la puissance navale américaine et européenne, repose sur ces mêmes huit conditions. Et chaque fois que se produit une détérioration de l'une d'entre elles – comme l'inaptitude croissante de l'Europe continentale et du Royaume-Uni dans leur rôle de base terrestre – le centre de gravité de l'alliance tend à se déplacer de l'autre côté de l'Atlantique, vers les États-Unis et le Japon.

LE SAINT-LAURENT — MIA ET KLAUS

En cette fin du 20e siècle, cette grande puissance continue de diriger le monde comme Rome menait le bassin méditerranéen, après la destruction de Carthage, sa rivale. De nos jours, les États-Unis possèdent les navires, une solide base terrestre continentale comportant une défense aérienne et spatiale, les équipages, les ports, les bases à l'étranger, la volonté de faire respecter la liberté dans tous les domaines, l'esprit d'entreprise et, nous l'espérons, la conscience de l'importance de la puissance navale pour la survie de l'Ouest, ainsi que la volonté de la maintenir.

En fait, seulement deux de ces exigences pourraient être menacées. Les ressemblances existant entre la géographie péninsulaire de l'Italie et de l'Amérique pourraient entraîner chez cette dernière le même désastre qui amena la chute de Rome: soit l'invasion de ses bases terrestres par le Nord.

La seconde menace, peut-être celle qui semble la plus dangereuse présentement, serait que les Nord-Américains deviennent de moins en moins préoccupés de l'importance fondamentale de la puissance navale et n'aient plus la volonté de la maintenir à tout prix.

Il est peu probable qu'une puissance insulaire relativement petite comme la Grande-Bretagne perde cette conscience nationale, par contre le danger existe vraiment pour de grandes puissances continentales comme le Canada et les États-Unis où un important pourcentage des populations habite à de grandes distances des côtes. À cet égard, le fleuve Mississipi et la voie maritime du Saint-Laurent devraient exercer un effet bénéfique en transportant une brise salée jusqu'aux Grands Lacs et aux Prairies où l'isolationnisme continental a dominé si longtemps.

Deux exemples tirés de l'histoire de la Grande-Bretagne illustrent qu'il est essentiel d'être conscient de l'importance de la puissance navale.

Entre 1689 et 1697, Guillaume III d'Orange-Nassau mena la guerre contre la France de Louis XIV selon les techniques apprises dans sa Hollande natale, soit par voie terrestre, et l'Angleterre fut la grande perdante. Le second exemple provient cette fois-ci de la guerre d'indépendance américaine. Préoccupé d'avoir une grande armée terrestre, le germanique George III négligea la construction et le recrutement navals, ce qui joua un rôle considérable dans la défaite finale de l'Angleterre.

Au fil des siècles qui ont mené jusqu'à notre civilisation atlantique, la puissance navale a toujours été présente. Elle a fait ses débuts avec les anciennes civilisations babyloniennes et égyptiennes, puis elle s'est dirigée progressivement vers l'Ouest par la Méditerranée et en suivant les côtes européennes de l'Atlantique du Nord pour finalement traverser de ce côté-ci de l'océan au 20e siècle.

Il est vrai d'affirmer que la lumière de la civilisation vient de l'Est – Ex Oriente Lux – mais il est également exact de dire que cette lumière poursuit son chemin vers l'Ouest. Portée au gré des flots, la civilisation atlantique ou occidentale telle que nous la connaissons aujourd'hui est l'enfant de la Méditerranée.

**F. K. de Vos, ancien employé de Ports Canada retraité, est expert-conseil à Ottawa.*

PORTS CANADA COMPETITIVE ANALYSIS

Part five in a series

Is the Price Right?

*by Graham Pettifer**

Pricing has traditionally been one of the four "Ps" of the marketing mix: the other three being product, place and promotion. Each of these controllable market variables, according to the textbooks, should be in harmony in order to achieve the same marketing objectives. But an important difference between pricing and the other three variables is that pricing has a direct impact on revenue. All the other variables are cost based. As a result, pricing has a direct dual purpose — to attract customers and to generate revenues.

The important role of pricing in marketing does not in any way ensure a common approach to it by ports in North America. Indeed, pricing at these ports is anything but consistent in its use as a strategy according to a study by the Canada Ports Corporation. Entitled *Port Pricing*, the study was conducted as part of Ports Canada's Competitive Strategy Study. Although the study is not available for public release, the following is a summary of some of its findings.

Pricing of container services at Canadian ports with dedicated terminals is based on revenue from two sources: tariff items and lease payments. There are essentially three port tariffs. Harbour dues and berthage (sometimes referred to as dockage) are assessed on the GRT (gross registered tonnage) of the vessel. Wharfage charges are assessed on the cargo either on a weight or a measurement basis. Some ports offer volume discount rates to shipping lines which reduces the wharfage charges payable. Although tariff bills are usually paid by the agent of the shipping line calling at a port, the fact is that the charge is ultimately borne by the shipper. In fact, many shipping lines include a flat rate for wharfage charges when quoting ocean rates to prospective customers.

Leases exhibit a lot more complexity and variability than tariffs. Unlike tariffs, which apply to all customers, leases are negotiated and contracted with individual terminal operators. Consequently, they vary greatly even within a particular port. The contract is usually multi-year in scope, with different revenue options. The guarantee of revenue may be achieved through straight rental income, tonnage guarantees or a combination of both. Through lease provisions, effective wharfage rates are often reduced, so comparison between ports on the basis of nominal tariff rates can be very misleading.

When analyzing pricing at a port, it is always important to realize that a port's leasing and tariffs are not the only costs paid by shipping lines calling there. Indeed, there can be a multitude of charges as shown in Table 1. It is a worthwhile and useful marketing exercise putting together a pro forma of port costs to present to prospective shipping lines. By examining such a statement the frustration of shipping lines regarding multiple charges can be more greatly appreciated. Of the ten charges shown in Table 1, all are calculated on a different basis and payable to various companies working within the port community. The shipping line may also have to pay inland freight, agency fees, gate and container stuffing charges, container damage surveying costs and additional terminal charges such as plugging in reefer containers to electrical outlets.

Pricing at American ports is very different from their Canadian counterparts. None of the major U.S. container ports in this study, which included Los Angeles, Portland, Tacoma, Seattle, Baltimore and Savannah, charge harbour dues. The only charge based on the vessel at these ports is dockage (called berthage in Canada).

The important role of pricing in marketing does not in any way ensure a common approach to it by ports in North America. Indeed, pricing at these ports is anything but consistent in its use as a strategy . . .

All of these U.S. ports have a tariff for container crane rental, reflecting their willingness to own non-fixed equipment. Sea-Land Terminal at the Port of Tacoma is the only exception.

The application of wharfage varies greatly from port to port in the United States. Los Angeles applies a general rate (NOS — not otherwise stated) but has no NOS rate for "eastern North America" and a higher one for other traffic. In addition, it charges a rate for empty containers which varies by the length of the box. Portland has a commodity wharfage rate and also charges for empties Tacoma charges the same flat rate per TEU, whether full or empty. The Port of Baltimore has a sliding scale that declines with volume according to the number of containers handled per call, as well as a charge per empty. Savannah imposes a flat rate per tonne. Finally, Seattle beats them all by not charging any wharfage. There appears to be no consistent approach among ports surveyed.

U.S. ports also appear to accept varying degrees of business risk or uncertainty. For example, Tacoma charges a rate that varies within a very restricted range according to traffic. In the short term, the port bears little of the business risk, both positively or negatively. Los Angeles and Portland, on the other hand, have minimum guaranteed revenues from container terminal users.

There are several ways in which U.S. ports differ in pricing facilities when compared to Ports Canada container ports, as follows:

- There is much greater prevalence of deals made directly with ocean carriers in the U.S.;
- U.S. ports are extremely flexible in structuring terminal agreements. The ports are willing to enter into terminal agreements that differ markedly even within the same port. Not only can the rates differ, but so can the basic structure of fixed versus variable charges, the length of the agreement, the kinds of guarantees and other provisions;
- Several ports are charging wharfage on a TEU basis rather than on a tonnage basis, reflecting the perspective of the shipping line;
- Through differential wharfage rates on services and trade routes, several ports are targeting specific market niches;
- Many U.S. ports have a charge on empty containers. In fact, at Tacoma it is the same rate as that for full containers. As a rule, Ports Canada ports do not charge wharfage on empty containers; and
- Many U.S. ports do not have strong emphasis on cost recovery. Rather, the objective may often be local job creation. The port is treated as a public good supported out of a tax base; hence, pricing does not recover the full cost of the facility. Seattle is an example of such a port (See *Portus*, Spring 1988).

And differences also exist in the approval mechanisms for port tariffs. U.S. ports

adjust rates after varying amounts of local approval and procedures. For example, the Port of Savannah, which is under the jurisdiction of the Georgia Ports Authority prepares a study to adjust tariffs. This document goes before the Tariff Committee, which is made up of officers of the Georgia Ports Authority. Once the Tariff Committee gives its approval, no Board or State Government approval is required. At the Port of Los Angeles, which is run by the City of Los Angeles, authority for revising tariffs rests with the City Council. Changes take effect on the 45th day after filing the rates with the Federal Maritime Commission.

By contrast, rate changes in Canadian ports typically require up to four months for implementation. Although this does not usually happen, the Minister of Transport and the federal government have the authority to impose or modify rates. The "6 and 5' anti-inflation measures of a few years ago was such an occurrence. The rate changing procedure has been streamlined with the increased autonomy of the Local Port Corporations, but is still generally more constrained than at U.S. ports.

Drawing conclusions on the competitive pricing of ports is difficult. There are many variations in pricing features at American ports and even trying to produce a summary chart comparing all the ports surveyed would be difficult at best. Indeed, to establish whether one approach is better than another can be misleading. Each port has objectives beyond the pure marketing approach to pricing (e.g., cost recovery or social programs like job creation).

Dockage, wharfage and rental charges are not always related to the costs implied by their names. They are treated rather as sources of revenue for a facility to make up its total cash flow requirement. The individual charges are used to create the desired proportions of fixed and variable revenue for a port. No matter how they are put together, it is clear that as one of the four marketing variables affecting a port's competitive position, pricing not only affects the overall door-to-door cost of the international movement of goods from shipper to consignee, but it also has a direct impact on attracting shipping lines to calling at the port.

**Graham Pettifer is Director of Business Analysis and Development, Canada Ports Corporation, Ottawa.*

TABLE 1

TYPICAL CHARGES ASSESSED TO CONTAINER TRAFFIC AT PORT

ITEM	RATE BASIS
Terminal Charges	per lift
Wharfage	per tonne
MEA Assessment & ILA Pension	per tonne
Towage (in and out)	per tug
Berthage	per GRT/time period
Pilotage (in and out)	flat rate plus per unit service measure
Harbour Dues	per GRT
Lines (in and out)	per operation
Ship Federation Dues	per GRT
Boatmen (in only)	flat rate

Source: Canada Ports Corporation

The 1989 Ports Canada Engineering Conference

From Nuts to Bolts

*by Ray Mack**

On May 9-10, 1989, engineers and technicians from 12 Ports Canada ports and the National Office in Ottawa gathered at the Port of Trois-Rivières for the 1989 Port Engineering Conference. A wide range of topics was discussed by the participants.

A presentation by Yvan Gagnon, National Office Senior Advisor, Environment, on the impact of the new environmental law on port construction examined such things as which types of projects must be reviewed to determine their impact on the environment, and what mitigative measures will be necessary if the projects are to be approved. Gagnon noted that certain projects can be screened out of the review process because they are, by their nature, not likely to impact on the environment (building renovations, for example).

Repairs to cracked concrete piles using steel-fiber-reinforced concrete was the subject of another paper. The expansion of a forest products terminal was described (a $38,000,000 project to add six new cribs and six hectares of new back-up land), with special attention to the problem of differential settlement between the new cribs and the existing ones). The group heard a presentation on dynamic compaction (compaction of a soil or gravel surface by means of large weights falling repeatedly from a great height) and its successes and failures at the Port of Montréal. EDI was briefly described by Niels Rasmussen, Manager of Research and Development at the Canada Ports Corporation National Office.

A presentation on container terminal capacity balance focussed on the technique of balancing the investment in ship cranes, the number and length of ship berths, the size of the container storage area and the capacity of the truck/rail facilities, to avoid overexpenditure and waste in any one area. The group members watched demonstrations of the use of computer-aided design for preparing engineering drawings, and computer programs for such purposes as contract management and cash flow control.

Alex Naudts, Manager, Grouting & Special Techniques, Trow Ontario Ltd., a guest speaker, made a visual presentation to the group on the subject of soil grouting, and gave a demonstration of how modern grouting materials perform underwater. He mixed two grouting components together in a container, added water and allowed the spectators to watch as the mixture boiled up and solidified into a stiff, rubbery foam. Several of the port engineers thought of applications for a foam with these characteristics in such areas as behind crib keyways, to prevent fill from escaping into the harbour.

At a dinner, the participants were introduced to the members of the Local Advisory Council of the Port of Trois-Rivières, and addressed by Jean Michel Tessier, President and Chief Executive Officer of the Canada Ports Corporation.

At the conclusion of the conference, the group members toured the Port of Trois-Rivières to examine the port facilities, then visited the industrial park and port at nearby Bécancour.

**Ray Mack is Facilities Planning Engineer, Canada Ports Corporation, Ottawa.*

Characteristics of Port Operating Environment

In Search of Calmer Seas

*by Jean Michel Tessier**

Strategic behavior within a port system is determined by a broad range of institutional, economic, technological and other factors. I would like to highlight three such factors of particular significance to Canadian ports. They are important because more than any others, they account for increasing urgency in both short and long-term planning considerations:

Trade Support — Changing economic policy and global trade patterns are having an impact on some of Canada's traditional markets. This puts additional pressure on ports as a link in the transportation chain for overseas markets. This impact is felt particularly by commodities such as coal and grain.

North American Container Port Competition — Increased global competition at the product level has put substantial pressure on transportation carriers, especially marine carriers. During the past decade, innovative economic and technological means of reducing ocean-carrier costs have put such carriers in the driver's seat in terms of route and port selection. The use of large container vessels requiring fewer port calls has concentrated traffic near major market areas. Proximity to major US ports on both the east and west coasts, and highly-developed inland transportation has increased competition for Canadian container ports.

Port Rationalization — Close association of Canadian port activity with direct regional economic activity has caused resistance to the rationalization of ports, considered necessary if the port system is to be efficient Strong government support for regional economic objectives over the years have contributed to "too many ports chasing too little traffic."

I believe that most ports are affected by one or more of these factors, requiring sound planning and strategic marketing.

Key Objectives for Canadian Ports

To deal with this increasingly-complex business environment, I would like to highlight a small number of really key objectives which Canadian ports share to a large degree:

- To gain the full acceptance of ports as part of a totally-integrated transportation service, but that part which can best play a partnership, and even a leadership role in new business strategy.
- To achieve revolutionary and imaginative means of reducing costs in both intermodal and bulk cargo movement.
- To practice strategic marketing, both at the port and system level, where generic and specific promotion initiatives are well co-ordinated for the best results.
- To adapt to new trade policy including the Canada-US Free Trade Agreement (FTA) and Europe 1992, with the aim of diversifying for future growth.

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- To play a leading role in the port community in creating an awareness of the importance of the port function to the economic and social well-being of the area, as a means of achieving a balanced view in port/urban conflict experienced today.
- To achieve concurrence with central policy agencies on issues requiring the establishment of a level playing field in the interest of efficiency in the port system, recognizing the trade-off between operational efficiency and direct economic and employment impact.
- To attain a sustainable level of port development and investment to meet current and future requirements.

Port Strategies for the 1990s

In attempting to achieve these objectives, and accomplish the desired outcome for the 1990s in the Canadian port system, we are applying, in our respective roles, a number of appropriate strategies — strategies which give results.

The urgency of strategic response to the issues I have been mentioning are shared by all. The specific actions taken, of course, have to be tailored to the resources and skills of the individual business unit or port.

I would like to begin with the objective of gaining full acceptance of the port as part of a totally-integrated transportation system.

The full implications of the concept of integration in transportation is only now being realized. Ports have probably had greater difficulty because of the reluctance to let go of the concept of captive hinterland for traffic.

The containerization of general cargo and the development of intermodalism has changed all that and left all ports vulnerable. The concept is applicable, to some extent, even to certain bulk traffic, depending on your location.

Now ports see the urgency of thinking beyond their traditional responsibility with respect to cargo. As part of their marketing strategies, they are attaching themselves to trade missions and industry tours to determine first-hand what is needed to attract cargo. Similarly, they are taking a more direct role at the community level in economic development, in determining who has to do what to get the attention of industry. There is greater and greater acceptance of an extended port role.

One of the areas most difficult still to break into is labor-management negotiations at the port level. I have had first hand experience as a port general manager during a labor dispute. Within the framework of existing federal legislation, we extended our sense of partnership in that case; but institutional changes are required to accommodate further progress in this area. Most of our ports are committed to enhancing labor-management relations whenever possible, and labor is much more responsive to the idea of ports getting directly involved. The recommendations of a recent waterfront commission inquiry in Australia also reminds me of the importance of this issue.

As one of many players in a competitive environment, ports are getting over the fear that they may learn something they may not like. Many routing decisions are destined to disadvantage a given port. A new partnership role has now fostered more of an attitude of "the sooner you know what it's all about, the better you may be able to fix it."

In Canada, ports have been pushing railroads to keep pace with inland transportation developments in North America. There is still a major gap between progress in this area in the United States compared with Canada. There are other related strategies one can identify.

Next, is to identify responses related to the objective of reaching, jointly with other players, more revolutionary and imaginative

means of cost reduction.

I am intrigued with the progress being made through intermodalism in reducing door-to-door transportation costs. The integration of services has presented opportunities for cost reduction undreamt of only a few years ago.

It is unlikely that the same scale of cost reduction achieved in the United States through double-stack train service can be achieved in Canada. It has been suggested that Canadian rail was actually ahead of U.S rail before this new technology. Volume is a major constraint in Canada. However, we have the commitment now to push the limits. Double-stack trains are now in service between some market areas in Canada. In order for it to succeed, provision has to be made in Canada for factors not encountered in the United States. Ports are working more and more closely with the rail lines.

There are indications that further savings are possible through additional integration. In a recent article by Dr. Ernst Frankel of MIT in *Ports and Harbors*, it is suggested that considerable additional cost reduction is possible. Much of these new areas of cost reduction relate to further integration of management decision. An area of considerable interest to our major bulk ports, is whether the realignment of investment and less isolation in some of the decision process for grain, iron ore, coal, and sulphur, for example, could achieve such benefits. It begs the question, what would be the door-to-door cost if there was less proliferation of the management of the total route.

One area in which Canadian ports have now begun to move forward is readiness for the application of electronic data interchange (EDI). Throughout Ports Canada, everyone has taken an interest. Our senior management at the Canada Ports Corporation and local port corporations are playing a leading role in various aspects, especially the setting of national standards and the carrying out of pilot projects with the carriers. This has major implications for the productivity and efficiency of our ports, and is an example of maybe being *further ahead* by being a *little* behind.

We must all adopt a strategy to create an innovative environment which fosters creative problem solution. Benefits from such an environment could apply to any one of our Canadian ports or industry sectors. The recognition of the importance of people who can offer creative ideas is the starting point. In a recent presentation, Dr. John Martin of Martin O'Connell Associates, suggested that ports often do a classical job of underestimating the extent of influence they can have over factors beyond the direct control of the port.

Now to the practice of strategic marketing. More and more of our ports are kicking new life into their marketing plans and taking sound strategic steps to meet competition head on. This is particularly true of our container ports, but true also for most of our bulk ports, especially those who are hard hit by changing trade patterns, government policy decisions, and generally-increased competition at home and from the US ports.

Ports are now involved on all fronts, much of which entails joint initiative with other players. On probably a greater scale than ever, they actively pursue and lobby local and foreign shippers, carriers, import-export agencies, and government agencies, with the strategic purpose of gaining a foothold in new growth opportunities, and taking a much stronger stand on policy issues which impact negatively on their future.

Sometimes we must adapt to new policy direction, even when tangible benefit is not yet fully apparent. FTA is a good example of this.

Canadian ports already operate in an environment of major trade with the US, thereby reducing the amount of waterborne traffic which might otherwise be available to them. There is considerable speculation that the FTA will result in additional Canada-US trade, possibly at the expense of overseas trade. Coincident with this are developments with respect to Europe 1992, the aim of which is to reduce imports from outside Europe.

This is a time for assessing carefully the impact of these agreements on industries which generate economic activity in general, and port traffic specifically. It is still too early to trace industry response, but we are taking the initiative to follow the issue closely. Studies have usually shown that port cargo growth correlates well with general economic growth, which is expected to result from the FTA. There is also no real justification yet for speculation that Europe 1992 may impact negatively on existing port traffic levels. In the Canadian Port system, appropriate attention is being given to the importance of port activities to the economic and social well-being of the surrounding area.

We have been going through a period, as in other countries, of increasing waterfront conflict in our major urban ports. Environmental sensitivity to major port projects in general has also been prevalent. There is a need to insure that the benefit side of port activity is not overlooked, which could have an adverse impact on port expansion decisions. The reverse can also be the case.

With respect to environment, ports have adapted to rigid environmental standards, set by the federal Department of Environment. All major port project proposals must contain provision for full environmental assessment.

With respect to port development, attention is focused on the development of the right facilities, at the right time, in response to real needs. Ports are run on a commercial basis and proposed new investments are assessed on the basis of incremental traffic. This policy has resulted in the achievement of financial self-sufficiency and local port corporation status by seven of Ports Canada's ports.

Five-year corporate strategic plans and one-year capital projects are prepared every year. Ports Canada ports are currently operating under an approved corporate plan entailing the expenditure of close to $600 million over the 1989-1993 period.

Finally, with respect to port rationalization in Canada, which I see as a necessary step to gaining improved productivity and efficiency for the system as a whole, I am happy to say that we have moved beyond the discussion stage with government in this very sensitive area. We have made real progress in investigating the regionalization of small groups of ports on both the Canadian east and west coasts. A small start, but a major step in the long run.

Related to this, we are taking advantage of every opportunity in Ports Canada to remind our Minister and appropriate government officials that expensive facilities at our ports need traffic to grow, and should not be undermined by government support for competing ports through unfair pricing policies or investment subsidies.

Concluding Remarks

In concluding, there are a few difficulties in the structure as it exist at present. However, certainly as far as Ports Canada ports go, the Crown corporation approach has injected a new sense of economic responsibility and management philosophy in the business of running ports. Some of the autonomy now enjoyed by our larger ports, has provided enough opportunity for local decision making and planning.

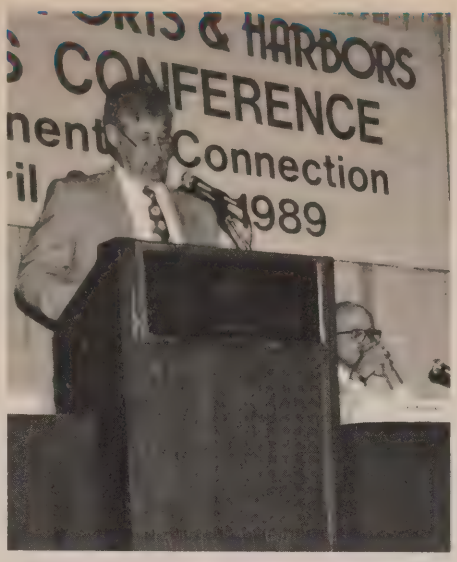
Meanwhile, all seven of our local port corporations are financially self-sufficient, and have contributed in a major way to their local economies through job creation, the support of local and regional industry and business, and the payment of municipal taxes. They have also contributed in an equally-significant way to the national good, through support of international trade, the payment of dividends to the federal government, and the implementation of the national ports policy. While there are several

refinements which we feel ought to be made to the legislation, the concept is good. I feel that the continued maturity of LPCs in their everyday affairs, and their recognition of the dual role of the Canada Ports Corporation, will allow us to jointly achieve additional benefits for both individual ports and the system.

Strategic marketing has been an important part of business for Canada's major commercial ports. It is the result of critical development in our operating environment and a means of attaining important strategic objectives in a highly-competitive market.

Port performance, as measured by our share of Canadian waterborne cargo, is good; however, a large percentage of our trade is with the US, not requiring port service. Although the new FTA will no doubt generate additional trade between the two countries, overall economic growth should also impact favorably on overseas trade.

Port development is tailored to needs which can be financially substantiated. The duplication of facilities within the Ports



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Canada system is kept to a minimum, and competition from other ports, both Canadian and US, is monitored very closely. A major study of the relative competitive position of Ports Canada container ports carried out last year identified major strengths and weaknesses, and has accommodated the development of a strategic plan for that segment of our port business.

Many of the issues which concern us are ones which we share with other ports of the world. Issues which are more unique to the Canadian port structure are ones which will challenge us to work together with all elements of the transportation system. The continent, and even the world appears to shrink a little each time we sit down to search for improvements. ⚓

**Jean Michel Tessier is President and Chief Executive Officer, Canada Ports Corporation, Ottawa. This article is based on extracts of a speech given at the 16th IAPH World Ports Conference which was held in Miami, Florida, on April 22-28, 1989, and has been edited for publication purposes.*

L'EDI en Europe

par Jean Lespérance*

Le comité sur l'EDI de Ports Canada, accompagné d'un représentant des Douanes canadiennes et d'un délégué du ministère des Communications du Canada, a récemment entrepris de rendre visite aux systèmes portuaires à Felixstowe en Grande-Bretagne, à Rotterdam aux Pays-Bas, et à Anvers en Belgique. Voici quelques constatations personnelles du correspondant, membre de la délégation (voir le numéro d'hiver 1989 de *Portus* pour une description générale de ces systèmes)

Le succès incontestable du système FCP80 à Felixstowe repose sur son monopole de la liaison électronique avec les Douanes de la Grande-Bretagne dans les ports qu'il dessert, et sur sa capacité de dépister et de contrôler l'inventaire des marchandises dans les ports. La première caractéristique garantit la disponibilité des données nécessaires au bon fonctionnement de l'opération de contrôle des inventaires. Ce monopole permet aussi au système d'atteindre un volume de transactions suffisamment élevé pour assurer la rentabilité financière du service, tout en limitant les frais d'utilisation à un niveau raisonnable.

Par contre, INTIS à Rotterdam et SEAGHA à Anvers n'ont pas le monopole des échanges électroniques avec les Douanes de leur pays. Les systèmes SAGITTA aux Pays-Bas et SADBEL en Belgique permettent aux importateurs ou à leurs agents de se brancher directement au système douanier. Pour les abonnés avec un faible volume de transactions, ce sera peut-être avantageux de passer par INTIS ou SEAGHA. Pour ceux dont le volume est plus grand, ils auront probablement tendance à négliger la liaison via le système portuaire. Si tel est le cas, les possibilités de viabilité financière des systèmes INTIS et SEAGHA sont mises en question.

Les systèmes portuaires basés sur la technologie de la boîte aux lettres électronique ne semblent pas avoir un avantage aux plans de la rapidité d'implantation du système et de la sécurité des données.

En ce qui concerne la rapidité d'implantation, le temps que gagne un projet utilisant la boîte aux lettres en évitant les complexités techniques reliées à la programmation d'une vaste base de données comme celle du FCP80, est perdu en discussions entre utilisateurs sur les priorités des messages à être créés et sur le contenu des messages. Le temps que les utilisateurs mettent à modifier leur système informatique interne pour traiter à l'entrée et à la sortie les messages est un autre facteur qui ralentit la diffusion des systèmes INTIS et SEAGHA de boîte aux lettres au sein de la communauté portuaire.

En ce qui concerne la sécurité des données, les risques associés à une base de données centralisée sont en théorie supérieurs à ceux inhérents au système de boîte aux lettres. Cependant, les utilisateurs du FCP80, y compris le port de Ipswich, voisin compétiteur de Felixstowe, ne semblent pas très inquiets du fait que toutes leurs données sont emmagasinées dans la salle d'ordinateur du port de Felixstowe.

INTIS et SEAGHA sont une réussite à deux niveaux. D'abord ils ont élaboré des messages normalisés pour l'échange de données dans les opérations portuaires, par exemple, pour l'échange entre une compagnie maritime et un exploitant du terminal. L'ensemble de ces messages a servi non seulement à la normalisation à l'intérieur des ports de Rotterdam et Anvers, mais aussi à l'élaboration des normes internationales EDIFACT. Les ports du monde entier devraient les en remercier.

INTIS et SEAGHA ont également été très utiles au chapitre de la promotion et de la diffusion de l'échange de données informatisé (l'EDI) dans leur port. Cela constitue une tâche ingrate mais nécessaire pour que l'EDI puisse rendre son meilleur. Comme dans n'importe quelle chaîne, le maillon le plus faible détermine la force de la chaîne de transport. Les grandes compagnies sont capables de se débrouiller toutes seules en matière d'EDI, mais les petites peuvent bénéficier de l'aide du port.

En somme, cette tournée a fait ressortir l'importance de l'EDI pour tous les ports, malgré les différences entre les stratégies qui surgissent selon les variations des circonstances dans chaque pays. ⚓

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From the Fog and Darkness

*by Thomas E. Appleton**

Editor's Note: *In September of 1972, the Chairman of the then-National Ports Council, Dr. P. Camu, asked late T.E. Appleton to look into the history of Canadian ports. What follows became the prologue to a major research work into Canadian ports that was undertaken by the National Harbours Board, the predecessor to Ports Canada, in conjunction with the Queen's University, Kingston, Ontario.*

"En ce temps de brume ou obscur, il n'y a point de pilote"

Samuel de Champlain, *Traité de Marine, et du Devoir d'un bon Marinier* (1632)

Europe in America

Champlain crossed the Atlantic 29 times, of which 23 were between France and Canada. When he wrote that no pilot was of use in fog and darkness, he was drawing on his own unrivalled experience; but he spoke also for every navigator, both before and since, who has attempted landfall on the coast of Canada. Today, shipmasters penetrate our environmental defences by electronic aids and look forward to safe arrival in harbour and timely departure. In Champlain's day, every voyage was an end in itself; and lucky were those who survived to make another.

The early explorers had little direct influence on our ports — for an anchorage of refuge becomes a port only after settlement and trade — but it was the geography of sites, which later became ports, and which influenced the arrival of the explorers. It is open to doubt whether popular history is invariably correct in dating discoveries; but we can be certain that even the earliest European arrivals found our shores inhabited. It is nearly a thousand years since Leif Ericson found his way from Greenland to Baffin, Labrador and Newfoundland; more than half that period had elapsed before this brief Nordic interlude was followed by more permanent influences. We will concur in tradition by noting that John Cabot found the magnificent natural harbour of St. John's in Newfoundland on the patronymic day of June 24, 1497 — and once safely past that narrow gut, a vessel could lie protected from any weather — but the soft West country voices of his men foretold a seasonal fishing industry rather than permanent occupation and the workings of a trading port.

Half a lifetime later — in fact nearly a lifetime in conditions of the day — Jacques Cartier anchored at Québec after his brief visit to Gaspé in the summer of 1535; but the birth of the port and the city and the province, and of Canada as a nation, stems from July 3, 1608 when Champlain arrived from Honfleur in the little *Don de Dieu* and came ashore to hoist the *fleur-de-lys*.

New France

Geography is the predominant influence at Québec, the first Canadian port. In his book, *Colony to Nation*, Professor A.R.M. Lower writes that the indians called it the "Closed-up place" and he remarks that Québec was recognized as: "The first point in from sea where the river narrowed sufficiently to afford, in combination with a bend and an island (Orleans), a secure harbour for ships. All the effort involved in the founding of a people and in the exploration of a continent was to radiate from Québec."

In terms of modern transportation, Québec was the "interface" where the commerce of the land met the traffic of the sea in a harbour operated under constitutional authority.

Québec was more than the first harbour in from sea; in some way, it was the last. It marked the transshipment point after

which the seasonal highway to the interior was closed to seagoing ships in favor of *bateaux* and canoes. Although Montréal and Trois-Rivières were settled early in the French regime, they were not ports in their own right. Because of shallows from Lake St.Peter upstream, they can be seen only as stages in the long haul which lay in a vast involute of French influence from the main gate of Canada to the back door of North America at the mouth of the Mississipi.

The port administration at Québec came under the *Intendant*, who was responsible for trade and commerce, the greatest of whom was Jean Talon (1625-94). Talon started local industries in forest products, notably masts for the French Navy, which were exported to La Rochelle in vessels called "*flûtes*" which may be regarded as the first bulk carriers of ocean commerce. Thus, from the beginning of our first port, exploitation of natural resources was an influence second only to geography. By 1665, Québec consisted of 70 houses, divided as now into an upper and lower town, which sheltered some 550 people. From these primitive resources, Talon started a shipbuilding industry which, however limited, remains an adjunct of value to port activity.

By the time that New France was a firmly-settled colony, prosperous if dependent on the Mother Country, a third influence overshadowed geography and natural resources — the strategy of war.

From this point of view, Québec was badly situated, as the river which was its lifeline could be used for strangulation. When James Cook, who was squadron navigator under Admiral Saunders, piloted the British fleet safely across the tideway of the St.Roch Traverse in 1759, New France was doomed. But with remarkable and characteristic resilience in the conduct of its affairs, the Port of Québec expanded quickly after the period of adjustment which followed.

PUBLIC ARCHIVES CANADA

The British Colonial Period

River St.Lawrence

When the garotte of the St.Lawrence was once more a lifeline, geography, natural resources and the demands of war combined to build up trade as never before.

By the early 1800s, a few small sailing ships struggled up to Montréal under canvas, there to lie against the mud of the riverbank while an anchor in the stream held them precariously against St.Mary's current. After 1809, when Molson introduced the passenger steamboat *Accommodation* on the overnight run to Québec — the first steam service of the kind in the world — tugs began to appear. Montréal had a limited season, say from May till November at best, and with the small cargoes which were all they could lift, most sailing ships came no higher than Québec where they would anchor in the stream or berth alongside the timber booms which lined the river from Wolfe's Cove to *le vieux port*.

There, they would discharge inward cargoes of manufactured goods from Britain, waiting their turn to load outwards with logs which had spent a month rafting gently down from the upper Ottawa. Loading was a laborious process, each log being manhandled through the square port in the bows which was the trademark of the Québec timber drogher. These wooden sailing ships, often in terrible condition, were the lineal descendants of the *flûtes* of Talon's day and the ancestors of modern side-loading freighters. In the Napoleonic wars, when timber was unavailable from blockaded Scandinavia, they carried masts for the British naval dockyards and afterwards, in the 1840s, countless millions of wooden ties or "sleepers" for the railway boom in England. When the lower holds of these small ships were full, the square port was plugged and caulked, and they would top off with sawn lumber, potash or skins, often staggering under deck loads which made their arrival in Europe a matter of pure luck.

One cargo, even in the early nineteenth century, was self-unloading — immigrants. They came in their thousands and tens of thousands, some two and a half million arriving in the British North American colonies between 1815 and 1865, most of them by the St.Lawrence. This traffic was the fore-runner of the passenger business which has greatly influenced the ports of Québec and Montréal but, before the advent of systematic government policies, it was characterized by serious maladministration which, as in other areas of public life, can be as cruel as malicious purpose. No study of Canadian ports, particularly in the St.Lawrence, can overlook the Quarantine Station at Grosse-Île, below Québec, and the immigrant sheds at Pointe St. Charles in Montréal.

In June 1847, for example, newspapers reported that 35 sail were awaiting compulsory medical inspection at Grosse-Île,

each with some 250 to 500 passengers, perhaps to a total of 12,000 souls. Cholera was rampant, there were dead and dying on board the ships, the hospitals were full, and the Province of Canada was in one of its periodic crises of public health.

The beginnings of modern harbour administration stem from the Trinity House of Québec which was established in 1805. As trade increased, something had to be done about the channel from Montréal to Québec, particularly through Lake St. Peter. This was surveyed by Commander H. W. Bayfield R.N. in 1830 who, as

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Admiral Bayfield, eventually became the fundamental hydrographer of the St. Lawrence route from Newfoundland to the Lakehead.

In 1830, the first wharves were built in Montréal and the Harbour Commission was founded. There were as yet no docks, the wharves running along the bank of the river. Montréal Trinity House was formed in 1839 to handle the aids to navigation and; with the growth of trade, Customs Houses were built at Québec in 1832 and Montréal in 1840.

In 1838, the Montréal Committee of Trade petitioned Parliament, pointing out that the natural ship channel could not handle ships of more than 10 to 12 feet draught, suggesting also that it could be deepened to 16 feet at a reasonable cost.

After the union of the Provinces in 1841, the Board of Works appropriated funds but work was not commenced till 1844 when two steam dredges and floating equipment were built. The natural channel through Lake St. Peter was crooked, as it is today, and the Board took the bold decision of cutting a straight channel 150 feet wide and 14 feet deep. This turned out to be more expensive than had been thought and work came to a standstill for lack of funds. Bayfield was then asked for his opinion and, perhaps to the Board's disappointment, he advised against the straight channel but, as the work had been started, he agreed that it should be finished. However funds ran out and again the project was halted.

Following a period of uncertainty, the ship channel was placed under the Montréal Harbour Commissioners by an Act of 1850 which empowered them to borrow $120,000 and to charge dues of one shilling a ton on vessels drawing more than 10 feet, an early example of the "user pay" principle. By 1860, after successive Acts and loans, government took over and tolls were abolished and ships of 20-feet draught reached Montréal by the curved route through Lake St. Peter.

Difficulties of navigation were only partly responsible for inhibiting the development of Montréal. Although it was not until 1853 that the first ocean steamship on regular service berthed in Montréal (*the Genova*), it was the short season which was equally responsible for holding up investment by shipowners in ocean steam tonnage.

As always in Canadian transportation history, the solution lay in what is now called the "intermodal" concept. The key which really opened Montréal to profitable trade was the St. Lawrence and Atlantic Railway, opened in 1853, which joined Canada to the sea by the shortest route to Portland, Maine. Immediately thereafter, Hugh Allan of Montréal and his brothers started the Allan Line of mail steamships, sailing from Liverpool to Montréal in summer and to Portland in winter. This was the detonator which fired the explosive growth of Montréal in the ensuing half century by ensuring a year-round economy.

The Maritime Provinces

The early development of the St. Lawrence is essentially the making of a road into Canada, seasonal and waterborne at first, year-round by water and rail eventually. The Maritime Provinces, on the other hand, must be seen in an entirely different light. In their formative period under British colonial influence, geography and economics combined to ensure that they were cut off from continental Canada. We must look elsewhere for the first factors of growth.

On June 24, 1604, Champlain dropped anchor in what is now Saint John, N.B.; and he visited Chebucto three years later. In passing, we might note that he also stood on the site of the Panama Canal and at one time or another, he discovered most of the good anchorages from New England to the Gulf of St. Lawrence. However, it is unnecessary here to follow the tangled web of British, French and American influences in the internecine struggles of the eighteenth and early nineteenth centuries. We will note only that Cornwallis named the Port of Halifax at Chebucto on June 21, 1749, and that in 1783, Saint John was permanently settled by Empire Loyalists under the first Governor of New Brunswick, Sir Thomas Carleton.

At first, Halifax was a naval and military base with little pretension to anything else. However, with its prime situation as an ice-free Atlantic port (particularly important in the days of sail), Halifax built up a satisfactory trade with the Caribbean as well as Europe and, so far as the exigences of war and the *Navigation Acts* permitted, with the New England States.

Although there was no connection in winter with Canada, other than by overland courier on indian trails, there was a tenuous summer link before the coming of the

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railway. This came about following the British mail contract which was awarded to Samuel Cunard's British and North American Royal Mail Steam Packet Company (better known as the Cunard Line) in 1839.

Arrangements were made for onward routing of passengers and mails from Pictou to Québec, weather and ice permitting, by the paddle steamship *Unicorn* which was built in England for the purpose. This service was anything but regular, one of the few distinctions earned by the *Unicorn* being that she was probably the first seagoing steamer of any kind to be seen in Montréal.

In 1845, when the Cunard feeder service was discontinued, colonists in Canada felt that they were cheated because the British mail subsidy, which was intended to help them, in fact was now of more benefit to the Yankees of Boston. As the Allan Line mail contract joining Britain, Portland, Halifax and Québec did not operate until some years later, there was a period when Nova Scotia and Canada reverted to their separate worlds.

The Great Lakes

The classic route to the Northwest, through the Ottawa River and Lake Nipissing to Georgian Bay, had served well the French regime but after the *Constitutional Act* of 1791, which gave birth to British Canada, settlement in the Upper Province needed more tonnages than could be supplied by canoe.

This period is too early to talk of ports in the modern sense, but centers of trade began to develop. For a time, the Americans looked as though they would hold the initiative because of the opening of the Erie Canal in 1825 which facilitated trade between the Upper Lakes and New York by way of the Hudson and the Mohawk.

As with the port of Halifax, military influence was dominant in early water transportation in Canada but, with stabilization of the US border after the War of 1812, economics dictated that the solution to the problem lay in geography and topography, which was particularly favorable to canal building.

French military engineers had made a start with the Lachine Canal of 1733, really a canoe passage, but its successor the Lachine Canal of 1824 opened the way to the British "military" canals of the Ottawa River and the completion of Colonel By's Rideau Canal in 1832. By 1829, the first Welland Canal had been cut and small craft could reach the Upper Lakes. However, the main effort was put into the St. Lawrence canals, a monument to the vitality and foresight of the Province of Canada at the time, which joined Montréal and Lake Ontario so that ships of 9-feet draught could pass by 1848. Toronto was proclaimed a harbour in 1840 and, with steamboat connection to Montréal on the one hand, with trade to New York State on the other, many small ports were proclaimed in the decade following the union of the Provinces in 1841.

The railway boom of the 1840s greatly influenced the inland ports. Much of the traffic was in lumber which was stripped from Canada in enormous quantities after the invention of the steam sawmill.

As some of this freight was exported to the United States, a rail and water system also formed on a North and South axis. By Confederation, the Grand Trunk Railway, running from Sarnia to Québec, had become the vertebrae of the transport system. Thus, with railways in winter and canals in summer, and by a combination of both in cross-lake traffic, Canada became a year-round economic operation, limited only by geography and the limits of railway and canal engineers.

Confederation

The Administrative Structure

Under the *British North America Act* responsibility for ports and harbours was vested in the Department of Marine and Fisheries. These powers were exercised in various ways ranging from outright control in some small ports to a more tenuous influence in the large ones. As with public administration elsewhere at the period, political patronage was extensive and accepted. Dozens of harbours, incorporated originally under Acts of one or other of the Old Provinces, came under the new jurisdiction. In addition, some harbours continued to be operated by private interests, incorporated by law, either to suit local industry or as part of a railway system.

At the upper end of the scale were the Harbour Commissions, loosely described as "Federal" or "Municipal" according to the representation and powers involved. In fact, harbour commissions changed greatly from time to time. Montréal, for instance, which started in 1830 with three commissioners appointed by the provincial government, had 11 by 1894, of whom six were government nominees. Individual commissioners varied greatly in ability, changed often for political reasons, and sometimes took their responsibilities lightly. The system was sluggish at the best, corrupt at the worst.

Public Harbours, many dating also from the Old Provinces, were designated by act of Parliament which empowered the government to appoint harbour masters and to fix their remuneration from fees of office on a

statutory scale. Hundreds of Public Wharves, too small to be proclaimed as Harbours, were constructed here, there and everywhere, sometimes in response to political pressure rather than economic necessity. The private harbours, of which there were scores, are typified by the North-West Navigation and Railway Company, incorporated in the Province of Canada in 1862, which as empowered among other matters to ". . . build wharves and erect warehouses . . . wherever the same may be deemed expedient".

In all these ways, the Minister of Marine and Fisheries exercised his powers which, wide as they were in jurisdiction, became much wider geographically as British Columbia and Prince Edward Island entered the Confederation.

As yet, the ports thus included were small and many large ports of today were then non-existent. Vancouver, for instance, had never been heard of in 1871 when Victoria, whose roots go deep to the Hudson Bay Company days, was then the principal port on the Pacific coast. As in Eastern Canada, but with even more emphasis, the railway sparked the growth of Western ports. After completion of the CPR to Port Moody in 1886, the Canadian Pacific Company was awarded the British government contract for the China mail. In 1891, mail reached London in only 21 days from Japan by means of the *Empress of India* which berthed in Vancouver, alongside the train, after an 11-day Pacific crossing. Not long afterwards, by a combination of sea and rail transportation which foreshadowed modern methods, bales of silk from the Orient were shipped to Europe under express conditions which would be difficult to improve by surface transportation today. Vancouver began to be noticed as an important link in the "All-Red Route" and with the convenience of coastwise shipping to United States ports, it soon progressed.

In considering the history of Canadian ports, we must balance many conflicting elements. Harbour administration undoubtedly suffered from the growing pains of a new nation, bouncing with energy, which had more land than money. Some say that Canada was grossly overgoverned, the federal system involving descending layers reaching right down to small municipalities.

But, be this as it may, nineteenth-century Canada had a remarkably free economy, there was no income tax, speculators abounded in any land transactions and, with a partisan but largely ignorant electorate, entrepreneurs could make fortunes with a bit of luck.

On the progressive side, enormously successful development took place between Confederation and 1914 and, despite the faults of the port administration, foundations were laid which are firm today. In this article, it is impossible to do more than sketch lightly over areas of interest for further research but technical progress and engineering achievement must be given due notice. For example, it was John Young (1811-78) whose planning and foresight while chairman of the Montréal harbour commissioners came to fruition after his death in the building of the modern port which owes much to his ability and integrity.

With the buoyant outlook and increased

immigration of the opening years of the century, our ports were somehow carried along with the system, despite defects, until the Great War which taxed them heavily under emergency conditions. The post-war years were another matter.

The National Ports Survey of 1932

By 1931 and the onslaught of the depression years, Canadian ports were suffering from a blight which could no longer be ignored, a symptom to some extent of the troubles which deeply wounded the country.

In these circumstances, the Canadian Government invited a noted British consulting engineer, Sir Alexander Gibb, to report on existing harbours, to advise on additional facilities likely to be needed in the ensuing 50 years, and to recommend a better administrative system.

The Gibb Report, published in January 1932, is a fundamental paper on Canadian transportation. It comprises diagnosis, prognosis and recommended treatment for the ills of our ports as seen by an outside consultant. Compared to the voluminous publications of modern industrial analysis, the Gibb Report is a modest production running only to 180 pages. By modern standards, the study was conducted with slim resources other than personal experience and judgement, extensive discussion with those involved, and as much travel as could reasonably be expected between April 29, 1931, when instructions were received, and January 15, 1932, when the report was completed. From an editorial standpoint, it may have disappointed the author, because the first page consists of an embarrassingly extensive errata, but the Gibb Report had far reaching results. In many ways, its principal conclusion was that:

"The national ports have to serve more than local interests, and in the interests of the whole country, must be directed on national lines and in accordance with a definite coordinated policy."

With hindsight, and 41 years after the report was tabled, Sir Alexander Gibb's equally penetrating recommendation was:

"Adequate penetration of local interests, and of the port users, which at present is almost non-existent, is essential to the progress and efficiency of a port, and a strong local harbour council should be established on an elective basis."

On these two points, and on methods of financing, rests the subsequent history of Canadian ports and harbours. At the conclusion of the report, Gibb paid tribute to Alexander Johnston, about to retire as Deputy Minister of Marine, whose period of office of 23 years had covered some of the most difficult problems since Confederation.

The Department of Transport

In 1936, the Department of Marine and the Department of Railways and Canals were merged to form the Department of Transport. The first minister was C. D. Howe who held the joint portfolio of the founding ministries in the traditional phase. Howe's influence was dominant in the modernization which followed.

With the passing of the *Department of Transport Act*, Canada moved into a completely new phase which has since taken place. For the first time, all agencies of transportation, so far as federal legislation would permit, were placed under a single authority. It is worth noting that ports and harbours were by no means alone in trouble; the railways were bankrupt; canals had hardly been touched since 1904 except for the Welland, and a brash newcomer in the form of civil aviation, which had somehow been hatched under the auspices of National Defence, must now be brought into the transportation family under DOT. With these problems to face, it is remarkable that C. D. Howe, in the short time which remained before the Second World War completely absorbed his tremendous energy, founded the National Harbours Board, Trans-Canada Airlines, and revised the financing of Canadian National Railways.

The National Harbours Board (1936)

Under the Department of Transport, the National Harbours Board arose directly from the Gibb Report. Gibb identified seven "Federal" Harbour Commissions which were disbanded. These were Montréal, Québec, Trois-Rivières, Chicoutimi, Halifax, Saint John and Vancouver, each of which had three commissioners, all appointed by Ottawa without any machinery for municipal choice.

Under the new scheme, these ports came directly under the National Harbours Board. NHB subsequently assumed responsibility for the grain elevators at Prescott and Port Colborne and for the Hudson Bay Railway Port of Churchill.

The harbours commissions which Sir Alexander Gibb had identified as "municipal" continued to function. With varying constitutions these were Toronto, Hamilton, Trenton, Belleville, North Fraser, New Westminster and St. Boniface. Trenton Harbour Commission was disbanded in 1949, New Westminster was reconstituted as the Fraser River Harbour Commission in 1965, while the others continued to function as previously.

New harbour commissions, with municipal representation, were brought into fact at Port Alberni (1947), Windsor (1957), Lakehead (1958), Oshawa (1960), and Nanaimo (1960). Following the Confederation with Newfoundland in 1949, there came another round of rationalization. Many existing Newfoundland harbour commissions were disbanded, some harbours were proclaimed under the *Canada Shipping Act*, and other commissions were allowed to lapse owing the changing patterns of trade and consequent inactivity. In 1965, the Harbour of St. John's was brought under NHB administration.

With these changes came a need for a uniform constitutional and jurisdictional basis for all harbour commissions. This was achieved in 1964 when the *Harbour Commissions Act* was passed.

Since its inception in 1936, the National Harbours Board has undergone many

PORT OF VANCOUVER

PORT OF QUEBEC

changes, particularly in the last few years when the Ministry of Transport has changed very greatly to reflect modern concepts. The National Harbours Board is now divided into regional administrations with port authorities and port managers. All major expenditures in Canadian commercial ports are now reviewed by an interdepartmental body called the Canadian Ports and Harbours Planning Committee. In March 1971, the original National Harbours Board concept was further widened when cabinet decided to form the National Ports Council, representing all operating entities, with powers to co-opt the services of additional experts from other areas as may be found desirable.

Conclusion

This article is no more than an essay; it attempts to orient the author rather than to inform the reader. The history of Canadian ports is an immense subject requiring much research. No attempt has yet been made to provide statistics for the reason that no rationale has yet been established.

PORT OF QUEBEC

On general principles, the history will try to climb to an acceptable viewpoint, recognizing the national, regional and local aspects implicit in the subject. In addition, it will recognize that transportation is indivisible today; probably it was always thus. Certainly railway and resource development cannot be ignored. The opening of the Intercolonial Railway to Halifax in 1876, the transcontinental CPR of 1886, the Canadian Pacific to Saint John in 1891, and the inter-relationship of these to government lines, all had an influence on ports.

Finally, the history will attempt to follow the story of individual ports.

**Late Thomas E. Appleton was Historian, Marine Administration, Transport Canada, Ottawa, Ontario. This article is a based on a 1973 paper prepared for the Chairman of the then-National Harbours Board, the predecessor to Ports Canada.*

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Grain Market Roller Coaster

*by Henri Laflamme**

The international grain market has been acting like a roller coaster over the past year with market conditions going from a situation of over-supply and subsidy wars to a situation where availability of supply has been reduced drastically resulting in major price increases. As it is becoming well known, the major cause of this shift in market conditions is due to the North American drought. However, other factors such as the increase in Soviet grain purchases have also put added pressure on low world grain stocks. The North American drought has not only affected the world grain market but is also having a profound impact on the transportation sector, particularly in Canada. Since the Ports Canada system handled nearly 80 percent of Canadian grain exports, the drought has adversely affected grain traffic by 18 percent in 1988 (down to nearly 26 million tonnes from 31.7 million tonnes in 1987). During the first quarter of 1989, our grain traffic continued to remain below average levels, due to the drought, by falling 33 percent compared to the same period last year.

PORTS CANADA

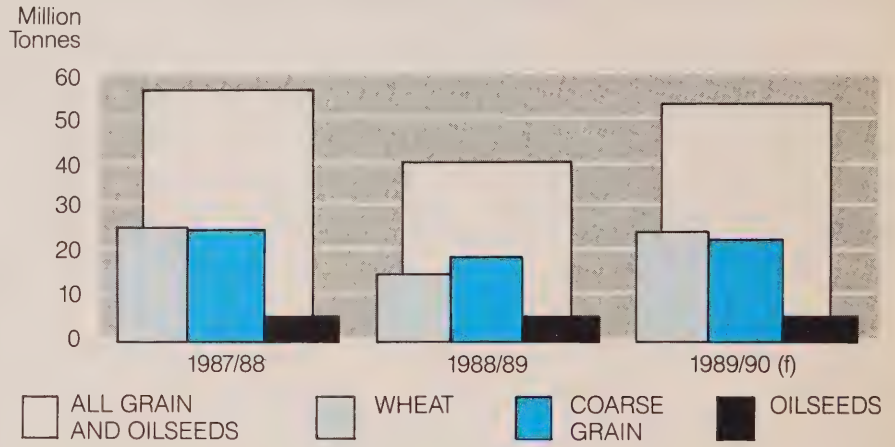
Canadian Outlook

The outlook for Canadian grain and oilseeds production seems to be good, at the end of May, with the only big worry being the very low subsoil moisture condition (see Exhibit 1). After falling 29 percent, Canadian grain and oilseeds production is forecast to increase by about 30 percent in the 1989-90 crop year (based on average rain falls during the summer and the expected amount of land that farmers are putting into production).

Large increases in production are forecast for wheat (60 percent) while coarse grain production is expected to increase by less that 20 percent and oilseeds production is expected to remain unchanged. The largest increases are expected for durum wheat (110 percent), rye (220 percent), flaxseed (75 percent), and all wheat except durum (55 percent). Barley production is expected to increase only 20 percent and oats by less than 10 percent. Canola production in the 1989-90 crop year is expected to fall by 15 percent.

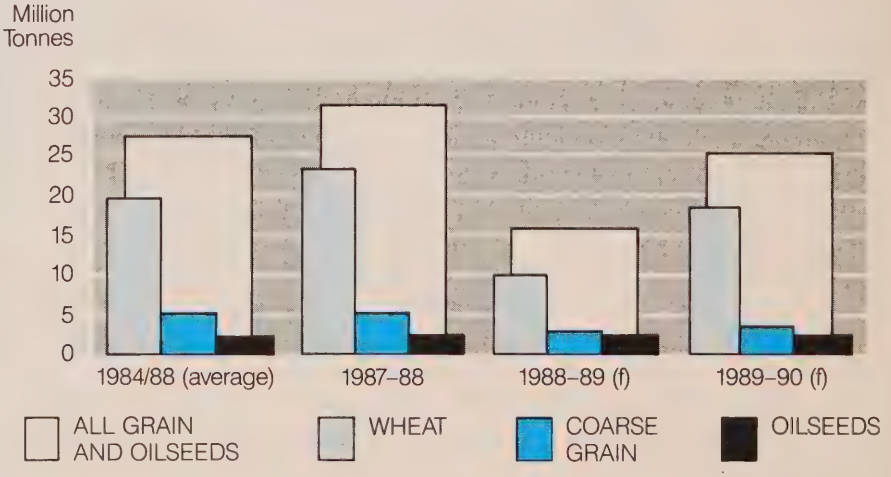
For the 1988-89 crop year, Canadian grain and oilseeds exports are expected to drop to 16.4 million tonnes or close to one half the level of the previous crop year (see Exhibit 2). With three-quarters of the Canadian crop year finished, exports stood at 14.3 million tonnes, a decrease of over one-third from the

EXHIBIT 1
CANADIAN GRAIN AND OILSEEDS PRODUCTION, 1987–88 TO 1989–90 CROP YEARS



Source: Statistics Canada and *Agriculture Canada.*

EXHIBIT 2
CANADIAN GRAIN AND OILSEEDS EXPORTS, 1984–85 TO 1989–90 CROP YEARS



Source: Statistics Canada and *Agriculture Canada.*

same period in the last crop year. Barley exports continued to suffer the most from the decrease in grain exports with shipments 48 percent lower than last year. Wheat (excluding durum) and durum exports were down 38 percent and 17 percent, respectively. However, canola exports increased by over 10 percent; while exports of oats leaped 169 percent.

Based on the above grain and oilseeds production forecast for the 1989-90 crop year, exports during that crop-year, however, should increase by over 50 percent from the previous crop year. This level will still be lower (by 20 percent) than what was exported during the 1987-88 crop year. The biggest increase is expected for all wheat (80 percent), while coarse grain exports should grow by close to a third. Only oilseeds exports are forecast to remain unchanged.

World Outlook

The major factor influencing world grain markets at this time is the outlook for U.S. grain production. The USDA released its crop report on May 11, 1989, which forecast that the winter wheat production will drop 10 percent despite a 13 percent increase in planted acreage. U.S. coarse grain production is also being affected by the dry conditions, with the 1989-90 production being revised downward to 234 million tonnes from 250 million tonnes. However, this is still well over 1988-89 production of 150 million tonnes. Even with these lower production estimates, the U.S. has offered 1.65 million tonnes of wheat to the Soviet Union under the Export Enhancement Program (EEP). Even if the subsidy amounts to no more than $5 per tonne, the decision is seen as encouraging other grain importers to hold back on wheat orders in the hope that they too will receive a subsidy. Since October 1988, the Soviet Union has purchased 17 million tonnes of U.S. grain, of which four million tonnes was wheat.

Soviet purchases of grain over the past year has also been one major element having an impact on the world grain market. Soviet wheat and coarse grain imports are forecast to reach 40 million tonnes in 1988-89 according to the International Wheat Council. The Soviets will be buying 16 million tonnes of wheat with the remaining tonnage being coarse grain. This will be the Soviets' largest purchase of grain since 1984-85. However, for 1989-90, Soviet grain imports could fall by six to eight million tonnes because the present Soviet crop prospect appears good (at the end of May). Soviet grain production is forecast at 20 million tonnes higher than last year's production of about 215 million tonnes.

As for China, the prospect for grain production is mixed which will certainly lead to higher imports, while for the European Community there is a chance that they will have bumper grain crop. Finally, the forecast for Australia calls for an average crop.


PORTS CANADA

GATT Settlement

At the GATT Geneva meeting which was held in April, framework agreements were reached in Agriculture and in the three other areas which had been left unresolved after the Montréal meeting in December of 1988. Agreements in those areas enabled the GATT's Trade Negotiations Committee to also adopt the framework proposals in the 11 areas in which agreement had been reached in Montréal.

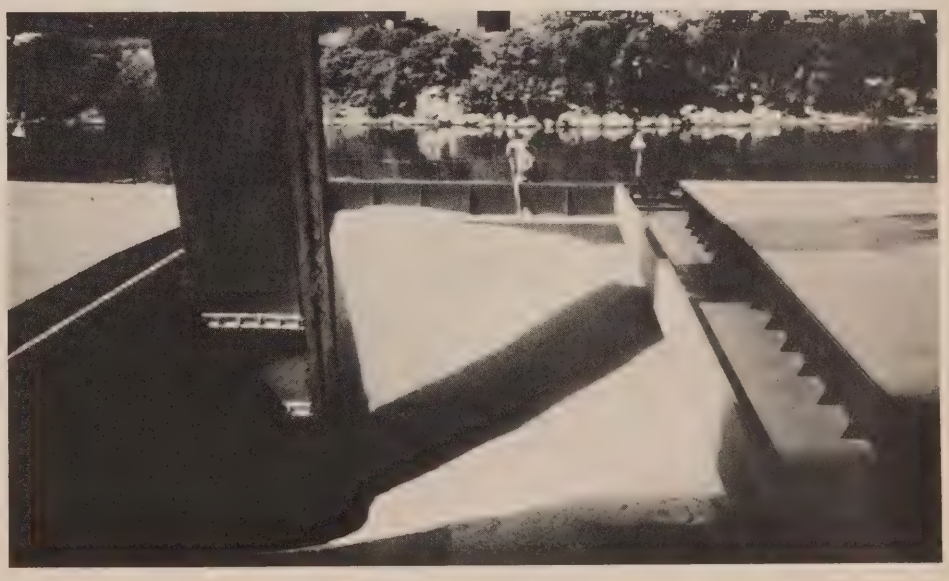
The compromise agreement which was worked out on agricultural trade includes a commitment to short-term freezes in support levels (at or below 1989 levels) and reductions, where possible, on export subsidies, price supports and other forms of protectionism. The final document states that the long-term objective of the Uruguay round is to provide for "substantial progressive reductions in agricultural support and protection which will result in correcting and preventing restrictions and distortions in world agricultural markets." However, the agreement sets no timetable for this to happen.

By the end of the year, countries are to provide proposals on how reductions in support levels can be achieved, as well as proposed ways to regulate agricultural trade. Long-term agricultural reforms are to begin in 1991, after the Uruguay round is completed.

Canada took the lead regarding the reduction in agricultural support levels by decreasing Canadian Wheat Board (CWB) initial payments (initial grain prices received by farmer) by between 9 percent and 39 percent compared to current prices. No.1 CW red spring wheat will be dropping nine percent ($155 from $170 per tonne); No.1 CW amber durum by 21 percent ($150 from $175 per tonne); No.1 CW barley by 29 percent ($85 from $120 per tonne); and special select CW two-row barley by 39 percent ($115 from $190 per tonne).

Transportation subsidy payments have also been reduced. Starting in the 1989-90 crop year, Western grain farmers will be paying 24 percent more to ship their grain by rail to port. The average rate will rise to $9 per tonne from $7.26 per tonne during the current crop year. By this measure, the Canadian government is reducing its share of grain transportation by rail from 76 percent to 70 percent of the total cost of moving grain to ports. Grain transportation subsidy was further cut by the elimination of At and East Grain and Flour Program ($40 million) which subsidized rail shipments of grain and flour to east-coast ports particularly those in the Maritime. Other subsidies directed toward the maintenance of grain-dependent rail branch lines were also abolished. Finally, the Canadian government will be abolishing the five cent per liter excise tax rebate for gasoline used on-farm on January 1, 1989.

**Henri Laflamme is Senior Business Analyst, Corporate Services, Canada Ports Corporations, Ottawa.*


PORTS CANADA

COAL CONFERENCE:

Japan Warns of Steel Industry Restructuring

*by Brian Acheson**

"Historically, it is true that the export of Canadian coal has expanded mainly depending on the export to Japan. However, I have to say that the mid- to long-term forecast of the Japanese steel industry is not necessarily what the Canadian coal industry expects." With that, Minoru Hashimoto, Managing Director of Purchasing, NKK Corporation, delivered a warning of a major restructuring of the Japanese steel industry to delegates attending the 38th Canadian Conference on Coal, held May 15-19, in Victoria, British Columbia. Hashimoto's remarks carried deep significance for the Canadian coal industry given that shipments of coking coal to Japan's steel industry accounted for 57 percent of total Canadian coal exports in 1988.

The Japanese steel industry enjoyed a strong year in 1988, with crude steel production, at 105.7 million tonnes, up 7.3 percent over 1987. However, Hashimoto observed that his industry does not expect these high production levels to be maintained. For 1988, the high level of production for the Japanese steel industry was fueled by strong domestic demand. However, it is felt that with the inevitable weakening of Japanese domestic demand, and the strength of the Yen making export sales more difficult, Japanese steel production could decline to levels of about 90 to 95 million tonnes annually.

In the face of what appears to be a coming period of decline in the demand for its product, and in light of the high fixed costs associated with steel production which require high capacity utilization for profitable operations, the Japanese steel industry is undergoing a restructuring process designed to maintain its competitiveness under conditions of lower levels of production. Key elements of this restructuring process include:

- the shutting down of eight blast furnaces to centralize production;
- the lay-off of 40,000 employees, or about 30 percent of the industry's workforce;
- the expansion of the steel industry into new business areas; and
- the establishment of a new raw materials purchasing system to accommodate changing quantity and quality requirements.

In the area of raw materials purchasing, Hashimoto warned Canadian coal producers not to rely on the Japanese steel industry to accept the quantities of hard coking coal that have been taken in the past. With the cost of raw materials accounting for about 40 percent of the total production cost of steel, the reduction of the cost of raw materials is a key element of the industry's restructuring program.

In order to allow for the use of lower-quality, less-expensive coals in steel making, the Japanese steel industry has led the way in developing pulverized coal injection technology. Injecting pulverized non-coking coal into blast furnaces can replace up to about 25 percent of the coke requirement; a percentage that is likely to go up with improving technology.

With the efforts of the Japanese steel industry to reduce the cost of its coal inputs, the quantity of low-quality and cheap coal used by the industry has grown. In 1980, only three percent of the total coal consumption of the Japanese steel industry consisted of semi-soft coking coal. By 1988, this had increased to more than 20 percent.

The Japanese steel industry is also developing a new smelting, reduction process for pig iron. The process consists of feeding fine coal and fine iron ore into a smelting furnace. The technology offers the possibility of eliminating hard coking coal completely from the steel-making process as sintering plants and coke ovens are not needed. While at this stage only small-scale pilot plants have been constructed, the industry is examining the possibility of commercial use for this process. If this technology is fully employed, the more expensive hard coking coal, of which Canada is a major supplier, would be replaced with its lower-cost non-coking counterpart.

For the Canadian coal industry, the development of technology to use lower-quality coal in steel making is a worrying trend. While Canada supplies roughly 25 percent of coking coal purchased by the

Japanese steel industry, Canada's share of semi-soft coking coal imports is less than ten percent.

Hashimoto's message to the Canadian coal industry at the Victoria conference was that the Canadian coal industry must be prepared to accommodate the changes taking place in Japanese steel-making technology. According to Hashimoto, "the Canadian coal industry should maintain its firm position in the Japanese market by paying attention to the trend of coal quality which the Japanese steel industry requires other than hard coking coal."

Hashimoto also encouraged the Canadian coal industry to look beyond Japan to increase its coal exports to developing countries with emerging steel industries. He noted that while steel production in developed countries, such as Japan, the United States and West Germany, has declined over the period from 1980 to 1988, it has in fact increased in developing countries, such as South Korea, Brazil and Taiwan.

Brian Acheson is Manager, Business Analysis, Corporate Services, Canada Ports Corporation, Ottawa.

Court Result "A Blow for Freedom"

Historic Victory for Dock Labor Scheme Employers

LONDON, UK—

On March 3, 1989, the Grimsby Fishing Vessel Owners succeeded in their High court bid to have an injunction lifted which prevented them from using temporary non-registered labor in times of high port activity.

Justice Christopher Rose criticized the National Dock Labor Board for its interpretation of Clause 10/3 of the Dock Labor Scheme and for allowing the case to drag on for so long. He awarded half costs against the National Dock Labor Board.

A spokesman for the Grimsby fishermen, Douglas Hall, was "delighted" at the decision and said that it "vindicated the stance taken by Grimsby Fisherman over a number of years".

Ken Cooper, chairman of NAPE, said today "It is an historic decision and a blow for freedom which recognizes for the first time that it is just not practical for the fishing industry to operate within the confines of the Dock Labor Scheme. This is good news for all small port employers. The tenacity shown by the Grimsby fishermen in their long struggle against the NDLB has at least been recognized.

On a Concrete Foundation

Bulk Port Development, Design & Operation
Reinhard H. Wohlbier, Editor-in-Chief, Trans Tech Publications, Federal Republic of Germany, 1987, 448 pages.

This book is volume 8 in a series of 10, entitled "The Best of bulk solids handling 1981–1985". The series covers virtually all aspects of bulk materials handling, including conveying by various means (both dry materials and slurries), storage facilities, stacking, reclaiming, sampling, weighing, blending and ship loading and unloading. This volume consists of 64 articles by various authors, on the subject of bulk port development, design and operation, as well as numerous advertisements for equipment for materials handling, sampling and weighing. The book is well illustrated with photographs, charts and drawings.

The articles can be grouped into five areas. The first area is the geometric design and physical layout of bulk terminals, with emphasis on cost effectiveness and efficient operation. Ship loading and unloading equipment of various types is discussed by several authors. Both large and small terminals are described.

The second area is that of electronic and programmable control systems, automation and the use of control towers to monitor material flow, and computer simulation models for both the flow of material and for vessel traffic.

The third area is environmental issues, procedures for obtaining permits (in USA), planning terminals in environmentally sensitive areas and methods of mitigating the negative impacts on the environment surrounding the terminal. Dust control systems and methods to minimize the production of dust are discussed by several authors.

The fourth area is terminal operation and includes articles from all continents, and from arctic as well as tropical regions, on such topics as stacking, reclaiming, transshipping, topping off, handling slurries, lightering, operating terminals in river systems and rail car unloading. While not strictly bulk materials handling, container loading/unloading using amphibious vehicles is also discussed.

The fifth area discussed is the rehabilitation, expansion and modernization of older terminals. One article describes in detail the installation of a new shiploader on a pier which remained in operation throughout the construction period.

Bulk materials discussed in the articles include grain, sugar, coal, urea, potash, oil, metallic ores and pellets.

The book would be a valuable tool for anyone who is planning a new terminal, seeking to expand or modernize an existing one, or concerned about efficient materials handling methods. It is not intended to be a text book or manual, but is a convenient reference to what is being done in various countries throughout the world.

• ***Ray Mack***

Du solide en vrac

Bulk Port Development, Design & Operation
Reinhard H. Wohlbier, Rédacteur en chef, Trans Tech Publications, République fédérale d'Allemagne, 1987, 448 pages.

Ce livre est le huitième d'une série de 10 volumes intitulée *The best of bulk solids handling 1981-1985*, qui traite pratiquement de tous les aspects de la manutention des marchandises en vrac : convoyage par diverses méthodes (pour les marchandises sèches et les boues), installations d'entreposage, mise en tas, récupération, échantillonnage, pesée, mélange, chargement et déchargement des navires. Ce volume se compose de 64 articles écrits par divers auteurs qui traitent de l'aménagement, de la conception et de l'exploitation d'installations portuaires de manutention de marchandises en vrac, et il comprend de nombreuses publicités d'équipements de manutention, d'échantillonnage et de pesée des marchandises. L'ouvrage est bien illustré par des photographies, des graphiques et des dessins.

Les articles peuvent être regroupés en cinq catégories. La première, qui porte sur la conception géométrique et l'aménagement physique des terminaux de marchandises en vrac, met l'accent sur la rentabilité et l'efficacité de l'exploitation. Plusieurs auteurs discutent de divers types d'équipement de chargement et de déchargement de navires. Ils décrivent aussi bien des petits que des grands terminaux.

La deuxième catégorie englobe les systèmes de contrôle électronique et programmable, l'automatisation et l'utilisation des tours de contrôle pour diriger la circulation des marchandises, et les modèles de simulation informatisés pour la circulation des marchandises et le trafic des navires.

La troisième catégorie d'articles porte sur les questions d'environnement, les procédures d'obtention de permis (aux États-Unis), la planification des terminaux dans des zones écologiquement sensibles et les méthodes visant à atténuer les effets néfastes sur l'environnement avoisinant. Plusieurs auteurs abordent les systèmes de dépoussiérage et les méthodes permettant de minimiser la production de poussière.

Quatrième volet, l'exploitation des terminaux fait l'objet d'articles provenant des cinq continents, depuis l'Arctique jusqu'aux régions tropicales, qui traitent de sujets comme la mise en tas, la récupération, le transbordement, le remplissage, la manutention, les boues et l'allégement, l'exploitation des terminaux en système fluvial et le déchargement des wagons de chemin de fer. Même s'il ne porte pas à proprement parler sur la manutention des matériaux en vrac, le chargement et le déchargement des conteneurs à l'aide de véhicules amphibies est également abordé.

Enfin, la cinquième catégorie d'articles porte sur la réfection, l'expansion et la modernisation des vieux terminaux. L'un des auteurs décrit par exemple en détail l'installation d'un système de chargement de navires sur un quai qui est demeuré en exploitation pendant toute la période de construction.

Les marchandises en vrac dont il est question dans le volume sont les céréales, le sucre, le charbon, l'urée, la potasse, le pétrole, les minerais métalliques et les granulés.

L'ouvrage sera d'une aide précieuse pour toute personne qui planifie un nouveau terminal, qui envisage d'en agrandir ou d'en moderniser un, ou qui s'intéresse à l'efficacité des méthodes de manutention des marchandises. Il ne s'agit pas d'un manuel mais c'est un excellent ouvrage de référence sur les pratiques en vigueur à travers le monde.

• ***Ray Mack***

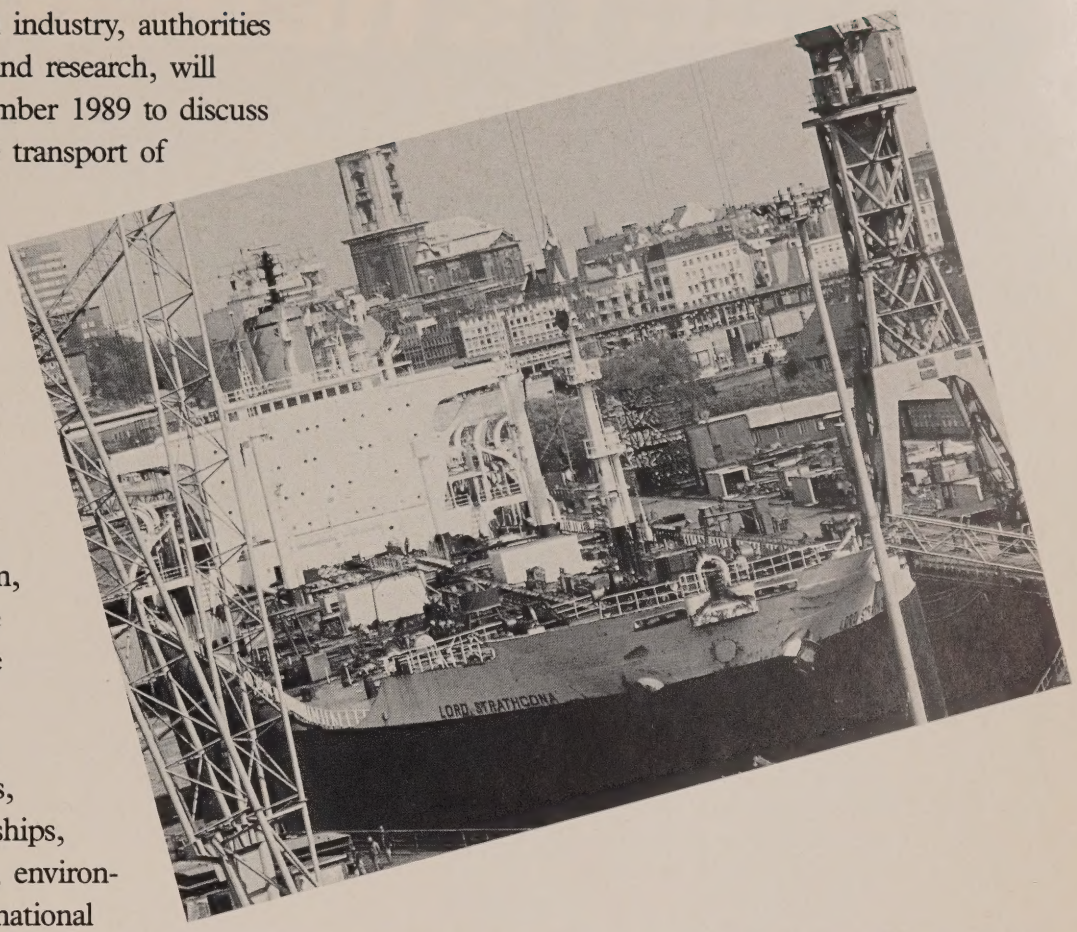
TDG 10

At the 10th meeting in the TDG series, experts from trade and industry, authorities and organizations, science and research, will meet in Hamburg in September 1989 to discuss status and tendencies of the transport of dangerous goods on waterways.

Under the auspices of the Federal Ministry of Transport, the *Federal Institute for Materials Research and Testing (BAM)* has taken over the organization of this international symposium, which will take place at the Congress Centrum from the 25th–27th September 1989.

Questions concerning the transport of packaged goods, the transport by dedicated ships, ports and inland waterways, environmental protection, the international and national legislation together with education and training will form the frame of a comprehensive lecture programme and accompanying exhibition.

Attention is also drawn to the 6th IAPRI World conference on Packing '89 also to be held from 27th, the last day of TDG 10, until 29th September 1989 at the Congress Centrum hamburg. There, the packaging of dangerous goods is one of the major topics.



10th International Symposium on the Transport of Dangerous Goods by Sea and Inland Waterways

Hamburg
Federal Republic of Germany
25th–27th September, 1989

Table rase

Le processus de planification permet à une organisation d'optimiser la conception, la mise en œuvre et le contrôle de ses tactiques et stratégies.

Plusieurs techniques de gestion ont été mises au point pour permettre aux organisations de rechercher des environnements dynamiques, de les assimiler et de s'y adapter, dans le cadre du processus de planification. Plus précisément, la technique du budget base zéro vise à permettre aux organisations de s'adapter à un environnement en constante évolution, caractérisée par des ressources de plus en plus rares, des bénéfices menacés et des changements de plus en plus fréquents.

À quelques légères différences près, la mise en oeuvre de la BBZ dans l'industrie portuaire n'est pas tellement différente de ce qu'elle est dans le secteur privé. Le processus exige de chaque gestionnaire qu'il justifie en détail la totalité de ses demandes budgétaires; c'est à lui qu'incombe, pour ainsi dire, le fardeau de la preuve. Pour chaque activité, la décision doit être étayée de toutes les données nécessaires : coûts, objectifs, autres possibilités, mesures du rendement et avantages. Le gestionnaire est obligé de proposer un vaste éventail de possibilités ingénieuses.

On détermine par la suite des niveaux minimums de dépenses pour les projets, avec d'autres niveaux de dépenses, de plus en plus élevés, pour lesquels on anticipe les avantages proportionnels. Tous les niveaux envisagés pour les projets seront passés au crible et évalués simultanément, et classés par ordre de priorité.

La technique de budget base zéro est censée avoir sa plus grande utilité pour les parties administratives, techniques et commerciales d'un budget. En 1985, Ports Canada l'a adoptée avec profit dans le cadre d'une restructuration de son organisation.

Comme plusieurs autres techniques de gestion, notamment la gestion par objectif ou la planification, la programmation et la budgétisation, la BBZ offre une méthode de communication, d'établissement des objectifs et de prise de décisions qui convient à tous les niveaux hiérarchiques d'une organisation.

Malheureusement toutefois, la BBZ a souvent été adoptée dans des organisations sans que l'on ait auparavant évalué sa viabilité ou son opportunité, et sans que les niveaux de gestion concernés souscrivent à la méthode ou la comprennent. Comme tout autre outil de gestion, la BBZ ne peut être utile que si l'on est conscient de ses limites et qu'on sache les compenser en consacrant davantage de ressources aux éléments pour lesquels la technique présente des lacunes. La BBZ suppose un processus viable de planification et elle doit être utilisée efficacement pour soutenir le processus.

La BBZ peut être adoptée avec profit quand la haute direction est convaincue de son utilité et dans une structure où les décisions sont de nature analytique. La culture d'entreprise doit être ouverte à ce genre de techniques de gestion et au changement en général. Enfin, l'entreprise doit s'engager à long terme. En effet, c'est souvent l'organisation elle-même qui fait obstacle à sa propre croissance et il n'est pas rare de constater un écart notable entre ce qui est prôné et ce qui est véritablement appliqué en termes de buts, d'objectifs et d'idéal.

Back to Basics

The planning process allows an organization to optimize the design, implementation and control of tactics and strategies.

A number of management techniques have been developed to enable organizations to actively search for, learn from and adapt to changing environments as an integral part of the planning. Specifically, zero-base budgeting was introduced as a means for organizations to adapt to a changing environment where resources are becoming scarce, profits are being threatened and changes are occurring with increasing frequency.

Implementation of ZBB for the port industry is not too dissimilar to the private sector, with only minor differences in mechanics needed. The process requires each manager to justify his entire budget requests in detail; and puts the burden of proof on him. A decision package is prepared for each activity showing costs, purposes, alternatives, performance measurements and benefits. The manager is forced to develop a wide range of creative alternatives.

Minimum levels of expenditure for projects are then identified. Alternative expenditure levels, each reflecting progressively higher spending levels, are also identified, along with anticipated incremental benefits. All levels for all projects are screened and judged simultaneously, by being lumped together and prioritized.

The ZBB process is claimed to be best applied to administrative, technical and commercial environments or portions of a budget. In 1985, Ports Canada successfully applied the ZBB process in an organizational restructuring exercise.

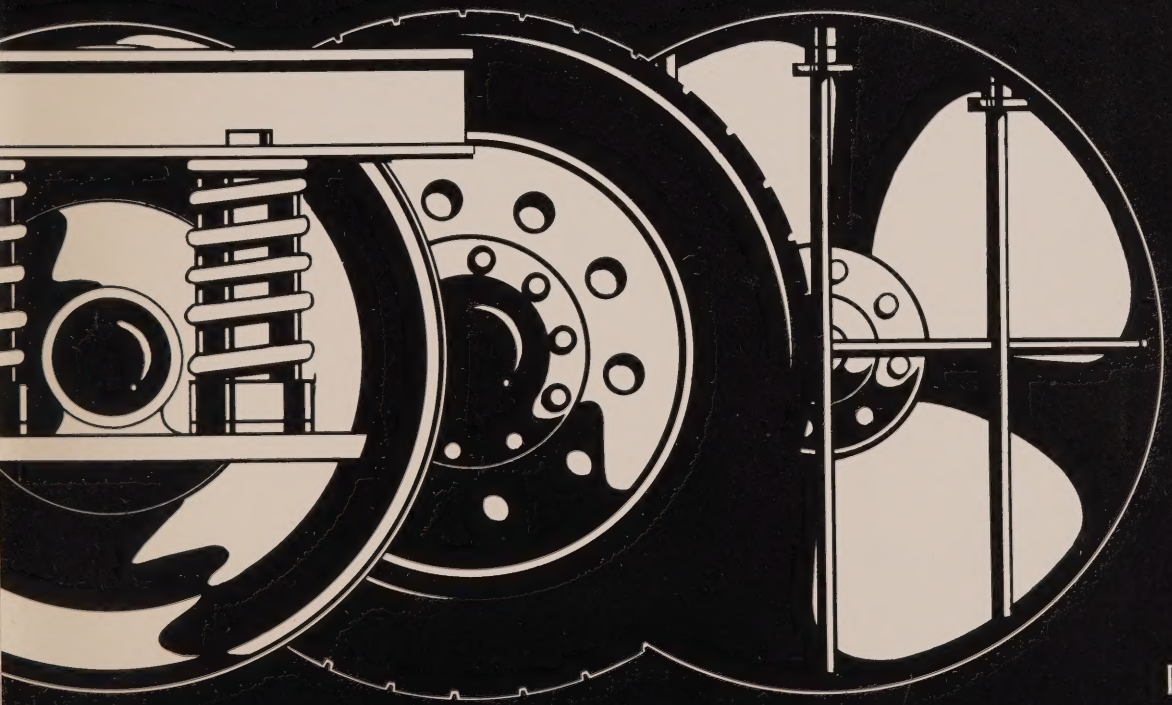
Like several other management techniques, including management by objective or planning, programming and budgeting, ZBB provides a means of communication, objective setting, and decision making which is suitable across all hierarchical levels of an organization.

Unfortunately, however, ZBB has often been introduced into organizations without considering its viability and appropriateness, and without support and understanding across affected management levels. As with any other management tool, ZBB is only useful if its limitations are recognized and compensated for by placing additional emphasis and resources in the elements not satisfactorily served by it. A viable planning process must exist; and ZBB must be effectively used as a tool to support the process.

ZBB can be successfully implemented where senior management support is strong, and where decisions are of an analytical nature. The corporate culture must be receptive to such management techniques, and to change itself. Finally, corporate commitment must be long term. Often the major constraint of organizational growth is found within the organization itself, and that there is a big difference between what is preached and what is practiced in terms of goals, objectives, and ideals.

• ***Hassan J. Ansary,***
Editor-in-Chief
Rédacteur en chef

Ports Canada réinvente le service d'un océan à l'autre



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